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? ds

Set	Items	Description
s2	216769	NETWORK?
S3	84812	DATABASE?
S6	16178	CLIENT?(2N)SERVER?
S7	46173	RH OR RHM OR (REQ? ? OR REQUEST?) (2N)HANDL?
S8	16314	TIMEOUT? OR TIME? ?(W)OUT? ?
S9	0	S19
S10	3767	(LOAD? OR DOWNLOAD? OR DOWN(W)LOAD? OR UPLOAD? OR UP(W)LOA- D?) (3N) (DATABASE? OR DB? ?)
S11	7649	(ASSIGN? OR REASSIGN? OR RE(W)ASSIGN? OR MAP? OR REMAP?) (2- N) (S2 OR S3)
S12	22110	(S2 OR S3) (3N)MANAG?
S13	14441	DISTRIBUT?(2N)NETWORK?
S14	12843	(SERVER?) (2N) (MULTIPL? OR PROCESS?)
S15	5127	S12 AND S6
S16	524	S15 AND S10
S17	153	S16 AND S11
S18	80	S17 AND S7
S19	632	REQUEST?(2N) (SORT? OR BATCH?)
S20	32	S18 AND S19
S21	0	S20 AND S4
S22	0	S18 AND DELETE S21
S23	26	S20 AND S8
S24	2	S20 AND PROXIMIT?
S25	30	S20 AND (S13 OR S14)
S26	32	S20 OR S23 OR S24 OR S25
S27	32	S26 AND REQUEST?
S28	372594	INSTANCE? ? OR REPLICATE? ? OR REPLICATION? ?
S29	6462	LOAD?(2N) (BALANC?)
S30	53104	SCHEDUL?
S31	23	S27 AND S29
S32	23	S31 AND S30
S33	23	S32 AND S28

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33/3,K/1 (Item 1 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00963611 **Image available**

EXTENDED WEB ENABLED MULTI-FEATURED BUSINESS TO BUSINESS COMPUTER SYSTEM
FOR RENTAL VEHICLE SERVICES

SYSTEME INFORMATIQUE INTERENTREPRISES A ELEMENTS MULTIPLES A ACCES INTERNET
POUR SERVICES DE LOCATION DE VEHICULES

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Detailed Description

Detailed Description

... ever increasing number of time sensitive,
relatively low dollar volume, vehicle rentals which in many
instances require authorizations to be made in advance,
reservations of vehicles from available geographic and vehicle...a great
step forward
over the people intensive business activity previously
required in order to **handle** the large number of transactions
encountered in this business relationship. Historically, the
replacement car market...

...desired replacement vehicle to be provided, monitor the
progress of the repair work so that **scheduling** of the rental
vehicle could be controlled, extending the vehicle rental in
the event of...connection. In
this context, a stateful connection refers to a 'persistent'
conversation, meaning that the **client** side and **server** side
software components establish a connection to one another once
and multiple data transfers may...own memory or to be familiar with

complicated and specialized codes to enter data or **request** transaction activity. With the recent and continuing explosion of the Internet, more people are becoming...which at the same time creates the potential for abuse. There have been well publicized **instances** of "rogue" employees making financial decisions or placing instructions which have far reaching financial consequences...for the web portal to interface between the user and the providers on the web **server** and eliminating the need for any custom software on the user's terminal. The details...present invention need merely send the necessary information electronically to a total loss product and **request** an electronic response. Once the necessary information is generated, the present invention WO 02/097700... wishes to purchase.

The user then selects one or more potential vehicles and sends the **request** to the appropriate car rental location. The car rental location can then contact the owner...to the processing of vehicle rental transactions and other related data such as car repair **scheduling**, etc. This functionality provides an extension of the usability to the invention to mobile users...is commonly found.

in different countries. For example, in some countries one adjuster authorizes and **manages** the rental reservation for the car while another adjuster authorizes and manages the insurance coverage...a 24/7 or full time connection to the Internet 24 is preferable, except for **scheduled** downtimes for maintenance, etc. The service provider 30 which for purposes of explaining the first...business application.

It should also be noted that the communication link 46 extending between the **server** 42 and each of the branch offices 44 may have alternative configurations. For example, in...which creates the web portal for access to the mainframe 32 and its resident program. **Server** 28 may use a bi-directional GUI to character based interface translator program, well known...the first set of communications allow for the reservation of the services. These can include **requests** for authorization or a rescind authorization **request** to be sent from the service provider to the service purchaser. Correspondingly, authorizations and authorization...

...services purchaser to the services provider. Confirmations are communicated upon confirmation of an authorized reservation **request**.

Authorization changes may be made and communicated from the services purchaser to the service provider...may be made, such as for changing the type of vehicle provided, extensions may be **requested** and entered ...contribute to an increased risk of services being rendered in an unsatisfactory manner in many **instances** to the end user. The first parent's invention has

taken the preexisting solution of...prevent hackers and the like from unauthorized access to the system. A first, set of **servers** 60 are interconnected in a network 62 and may preferably include an ancillary server 64 for running **load balancing** software or the like to **balance** the load and provide redundancy amongst what may be a plurality of web servers 60.

These web servers 60 may preferably be Sun Microsystem **servers** running Apache web **server** software, or other such suitable software as would be well known to those of ordinary skill in the art. This first web server network of **servers** 60, 62 **process** the random and disorderly communications flowing to and from this system and the Internet before...is depicted in Fig. 3 as being made

through the Internet 54, the network of **servers** 70 configured in accordance with the ARMS/WEB application software may utilize virtually any electronic...3 which parallels portions of that shown in Fig. 1 in that a pair of **network** mainframe computers, such as AS/400's 78, 80 may process reservations to and from...occasions when a damaged or inconvenienced vehicle is not made available for use when originally **scheduled**. In the prior art, many times an extension would then need to be **requested** through the system, with authorization **requested** and provided.

In order to streamline this process, and to minimize delay and involvement of...

...For example, an initial authorization may be for 12 days of a vehicle rental. A **request** for ...may be authorized automatically as being within 25% of the original rental term and a **request** for the additional 2 days requiring approval may be automatically generated. still another variation would...

...or body shop hours or down time for the repairs to take place. Then, upon **request** for an extension, ...advises the user of any "synch" data that is older than the current data, and **requests** the user to specify which data should be processed. After the processor is instructed by...for an individual item should it need to be changed and not entered as suggested, **requested** or listed on a user's action list.

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00806384
NETWORK AND LIFE CYCLE ASSET MANAGEMENT IN AN E-COMMERCE ENVIRONMENT AND
METHOD THEREOF
GESTION D'ACTIFS DURANT LE CYCLE DE VIE ET EN RESEAU DANS UN ENVIRONNEMENT

DE COMMERCE ELECTRONIQUE ET PROCEDE ASSOCIE

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Detailed Description

Claims

Detailed Description

... the destination network and thus keeps track of information sufficient to get to the appropriate **network**, not necessarily the appropriate end user. Therefore, routers do not need to be huge supercomputing... computers that make such choices. For the routing of information from one host within a **network** to another host on the same network, the datagrams that are sent do not actually...

...frame directly to the destination machine.

Indirect delivery is necessary when more than one physical **network** is involved, in particular when a machine on one network wishes to communicate with a...become part of one. larger whole with concomitant increases in the level of analysis, testing, **scheduling**, and training in all disciplines of the ISP.

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Internet Service Potential

Real-time...

...callback leg is enabled. In this embodiment, a callback customer participates through a Voice Over **Network** (VON) application utilizing a computer with voice capability, and can initiate a video screen popup...

...is to ensure quality of service (QOS) and produce reports indicatit both integrity and exceptions. **Scheduling** of resources is tied to this expert system, which regulates whether calls can be **scheduled** based on available or projected resources at the time of the proposed c(For example...

...there are insufficient outgoing trunk ports during the period of time that a callback subscriber **requests**, then the callback subscriber is prompted to select another time or denied access to the...

...elements;

and

3. Mediation and standardization of the network messages to aid processing by the **network management** framework of the NGN.

The **network management** components of the NGN provide comprehensive solutions to address these challenges. Correlation is provided by...

...embodiment of the present invention. The Fault Management component 4600 records failures and exceptions in **network** devices (e.g. network routers or UNIX servers) and performs the following operations.

1) performs...analysis by the Reporting Component; and

4) allows real time viewing of faults in a **network map** and **network** event views.

The Fault Management component 4600 includes the following elements. UNIX Servers 4602- Any UNIX Server with BMC Patrol **clients** loaded.

NT **Servers** 4604 - Any NT Server with BMC Patrol clients loaded.

SNMP Devices 4606 - Any SNMP manageable device.

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HP OV **Network Node Manager** (Collector Component) 4608 - HP OpenView **Network Node Manager** is one product which performs several functions. In this context it is it is responsible...

...a fault management context, Seagate NerveCenter performs rootcause correlation of faults and events across the **network**.

HP OV **Network Node Manager Network** ME 4612 - HP OpenView **Network Node Manager** is one product which performs several functions. In this context it is responsible for maintaining and displaying the node level **network map** of the **network** the MNSIS architecture monitors.

HP OV Network Node **Manage** 4614 - HP OpenView **Network Node Manager** is one product which performs several functions. In this context it is it is responsible...

...4616 - An Omnibus Netcool probe which is installed on the same system as HP OV **Network Node Manager** and forwards events to the Omnibus Netcool Object Server.

Micromuse Internet Service Monitors 4618- An...

...returned to the Omnibus and can be viewed as further reference.

Remedy 4636 - Remedy Action **Request** System, a trouble ticketing system.

Oracle Gatew 4638 - The Ormibus Netcool Oracle Gateway automatically reads...

...logs records within Oracle as customized by the user.

Oracle 4640 - Oracle is a relational **database management** system.

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Generate Time Key Scrip! 4642 - Script which generates New Time Records from alerts...

...custom script which automatically loads records into Oracle via SQL Loader Direct Load.

Proactive Threshold **Manager**

The Proactive Threshold **Manager** is an automated **network manager** that

forewarns service providers of a chance that a service level agreement to maintain a...a monitoring step 4702. In step 4702, the Proactive Threshold Manager monitors the NGN hybrid **network**. The Proactive Threshold **Manager** generally monitors the **network** at all times to ensure proper service is provided to subscribers of the network, by...

...subscriber service level agreements. Service level agreement information is generally provided to the Proactive Threshold **Manager** by the rules **database** which contains most pertinent subscriber information.

In a sensing step 4706, the Proactive Threshold Manager...

...further isolate problems within the network. Any information that is deemed critical to monitor and **manage** the **network** is translated into standard object format in a translation step 4806.

In a translation step 4806, infori-nation from step 4804 that is deemed critical to monitor and **manage** the **network** is translated into a standard object fonnat. Generally, typical operational events are only logged and...

...step 4806 is received by the Information Services Manager and forwarded to the Proactive Threshold **Manager**. The Information Services **Manager** provides the data **management** and data communications between the element manager and other system components. Generally, the Information Services Manager adheres to CORBA standards to provide universal information access by an object **request** broker. The object **request** broker allows the Information Services Manager to share management information stored in distributed **databases**. The Proactive Threshold **Manager** uses the infori-nation provided by the Information Services Manger to determine a current level...

...Information Services

Manager and the Presentation Manager to assist in the management of the hybrid **network** system. The three components are briefly described below to provide context for the detailed discussion of the element **manager** that follows,
Element Man

The element **manager** communicates with the **network** elements to

receive alarms and alerts through trapping and polling techniques. The element manager is...

...to further isolate problems within the network.

Information that is deemed critical to monitor and **manage** the **network** is translated into a standard object fori-nat and forwarded to the Infori-nation Services...

...be, but is not necessarily, software which adheres to open standards such as the Simple **Network Management** Protocol (SNMP) and the Object Management Group's (OMG) Common Object **Request** Broker Architecture (CORBA).

Information Services Manage

The information services manager provides the data management and...

...services manager adheres to CORBA standards to provide ubiquitous infori-nation access via an object **request** broker (ORB). The ORB allows the information services **manager** to share management information stored in distributed **databases**.

The information services **manager** stores critical management infori-nation into operational (real-time) and analytical (historical) distributed databases. These...the appropriate network operator.

Media and textual databases are also provided by the information services **manager**. The **databases** includes online manuals for administrative purposes, as well as for the maintenance specialists to access...

...provide procedures, policies and computer based training to network users.

The information services manager provides **requested** information (real-time and historical) to the network users via the presentation manager.

Presentation Manager...

...or Billing.

Customer Support Structure

The organization model for customer service support in the NGN

network

provides a single point of contact that is customer focused. This single point of contact provides technical expertise in resolving customer incidents, troubles and **requests**. Generally a three tiered support structure is greatly increases customer satisfaction in service needs. Each...

...customers network problem is solved at this stage, the process ends. However, if the customers **network** problem is not solved at this stage, the process continues to a Second Tier step...

...approaches include a

Functional Model, and a Bypass Model. In the Functional Model users are **requested** to contact different areas depending on the nature of the incident.

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Calls are routed...Data Mininiaz

The present invention includes data mining capability that provides the capability to analyze **network management** data looking for patterns and correlations across multiple dimensions. The system also constructs models of the behavior of the data in order to predict future growth or problems and facilitate **managing** the **network** in a proactive, yet cost-effective manner. A technique called data mining allows a user...up systems discover knowledge, generally in the form of patterns, in data.

Finally, in a **managing** step 5208, the **network** is **managed** based on the future behavior of the network. Data mining involves the development of tools...architectural differences. As such, TCP/IP protocols are publicly available in standards documents, particularly in **Requests** for Comments (RFCs). A requirement for Internet connection is TCP/IP, which consists of a...has two significant drawbacks. First, the setup time can be considerable, because the call signal **request** may find the lines busy with other calls; in this event, there is no way...

...voice using less than one-tenth of the bandwidth of PCM. However, the circuit switched **network** blindly allocates 64 Kbps of bandwidth for a call, end-to-end, even if only...its destination or networks over the internet. I EP Routers are also computers that connect **networks** and is a newer term preferred by vendors.

These routers must make decisions as to...

...Direct delivery is the transmission of a datagram from one machine across a single physical **network** to another machine on the same physical network. Such deliveries do not involve routers. Instead...become part of one larger whole with concomitant increases in the level of analysis, testing, **scheduling**, and training in all disciplines of the ISP.

ATM (asynchronous transfer mode) pushes network cont...operate within a "virtual black box," a collection of distributed, very secure WAF related hardware **instances** that are interconnected by secured information exchange (for example, telecommunication) processes and distributed database means...or she examines the content of the shopping basket as required to check the item **scheduled** to purchase and the pay amount of the items. Accordingly, it is not necessary to...sales using, for example, the Internet as a transport mechanism to transmit data representing purchase **requests** between a proprietary browser and server product pair. For example, Netscape Communications uses its Navigator...

...log-in or create an account, which is then stored in the server. Each subsequent **request** from the user must reference the unique identifier, either in the uniform resource locator (URL...with a remote service center. The mass storage unit stores transitory information, such as flight **schedules**, ticket prices, weather information and other information useful in the planning of a business trip...a collection of servers connected to the Internet that provide multimedia information to users that **request** the information. The users access the information using client programs called "browsers" to display the...

...Wide Web Servers are coupled to the global Internet. By deploying a World-Wide Web **Server** on the global Internet a company would create online service that is accessible to the millions of global Internet users.

Alternatively.) a company can deploy a HTTP **server** that is available to customers through dial-up phone service. A dial-up HTTP server...where advertising/content mixtures from other contexts, such as newspapers and television, have been simply **replicated** on the Internet. For **instance**, some newspapers have been "published" at least in part on the Internet, and include advertisements...Sends electronic fulfillment to the user

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Provides order confirmation and tracking number

Supports micropayment **processing**

Another embodiment of the invention processes transactions pertinent to the purchase of items. For example, credit card transactions are **processed**, as are purchase order transactions. A structured payment plan may also be created.

The actual...and a user of the software.

First, in operation 6402, a user is allowed to **request** to utilize a software package after which user input relating to the user is **requested** and received. See operation 6404 and 6406, respectively. Such information may include identification information such...

...environment as well as the individual personal computer. In a network environment, such as a **client-server** network, **multiple** users may access the same copy of a particular application. Consequently, the vendor can charge...a network.

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Electronic licensing typically comprises providing a set of criteria under which a **request** for an application from the server should be granted. One licensing system uses a fixed...

...When an application is desired, the application commences running. Code embedded in the application initially **requests** a license from the server to facilitate the execution of the application. The server checks the **database** of licenses, and if the appropriate licenses are available, grants the **request**. As **requests** are received and licenses granted, the relevant information is logged into a file to track usage of the various applications.

If a license is not available, the **client** contacts another **server** to find the appropriate license. The client in the conventional system has the responsibility to...

...licenses from the various servers, and the individual servers provide resources at the client's **request**. To facilitate such licensing, the application typically includes a library of programs designed to contact the server, **request** a license, and track the resulting license.

When a call is made to a server...

33/3,K/4 (Item 4 from file: 349)
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00784185 **Image available**

A SYSTEM AND METHOD FOR STREAM-BASED COMMUNICATION IN A COMMUNICATION
SERVICES PATTERNS ENVIRONMENT
SYSTEME, PROCEDE ET ARTICLE DE PRODUCTION FOURNISSANT UN SYSTEME DE
COMMUNICATION EN CONTINU DANS UN ENVIRONNEMENT DE CONFIGURATIONS DE
SERVICES DE COMMUNICATION

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Detailed Description

Detailed Description

... related processing that occurs on I/O clients and servers.

An intelligent network integrates heterogeneous **clients**,
servers, and other resources by resolving incompatible protocols
and standards.

An intelligent network has the capability...

...single copy of the message to the communications fabric, which then
distributes the message to **multiple** recipients.

The following are examples of protocols that provide Packet
Forwarding/Internetworking.

IP (Internet Protocol)...are examples of vendors of products that perform
Transport-level encryption.

routers.

Cisco Systems
Bay Networks
Xom Corp.

firewalls.

Check Point's Firewall-1
Secure Computing's BorderWare Firewall Server
Raptor...

...Systems' Eagle Firewall
routers.

Cisco Systems
Bay Networks
3Com Corp.

io Network Address Allocation 2412
Network Address Allocation services **manage** the distribution
of addresses to network nodes.

This provides more flexibility compared to having all description of
various Quality of Service parameters.

connection establishment delay - time between the connection
request and a confirm
being received by the **requester**
connection establishment failure probability - chance that the connection
will not be
established within the maximum...

...technique is the use of prioritized circuits within Frame Relay, in
which the Frame Relay **network** vendor **assigns** different
priorities to different pen-nanent virtual circuits.

Prioritization techniques are of limited effectiveness if...

...to nodes, applications, or voice calls) can be combined in the following
ways.

time division **multiplexing** (TDM) - use of a circuit is divided into
a series
of time slots, and each...T-carrier, E-carrier (e.g., T1, T3, E1, E3)
TDM and FDM (Time Division **Multiplexing** and Frequency Division
Multiplexing; used
on T-carriers, etc.)
SONET, SDH
PPP, SLIP
V.32@ V.34@ V.34...

...committed or rolled back. When a transaction is committed, all changes
made by the associated **requests** are made

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pen-nanent. When a transaction is rolled back, all changes made by the
associated **requests** are undone.
Transaction Services provide the transaction integrity mechanism for the
application. This allows all...

...provided by the DBMS software with its re-start/recovery and integrity capabilities.

For larger **client/server** environments distributed on-line transaction managers might be more applicable. These transaction managers provide sharing of **server processes** across a large community of users and can be more efficient than the DBMSs.

Figure...

...error information. Transaction Monitor Services, in conjunction with Information Access and Communication Services provide for **load balancing** across processors or machines and location transparency for distributed transaction processing.

Implementation considerations
Does the...

...data source messaging capabilities alone.

Does the system require high throughput?

Because TP monitors provide **load balancing** functionality and because they effectively reduce the number of connections that must be made to...

...are available on multiple platforms and maintain interoperability (communication, data translation, etc.) between heterogeneous resource **managers (databases)** and clients (UNIX, MS Windows NT, etc.).

For this reason, projects that intend to support...not need this feature can also benefit by using TP monitors. For example, the
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load-balancing feature in itself can help increase system performance. Also, the administrative facilities can help simplify system management.

Is Data Dependent Routing Necessary?

Data Dependent Routing is the ability to route **requests** to a particular **server** based upon the data passed within the **request**. TP monitors can provide this functionality.

e.g. A system has several servers accepting **requests** from clients dispersed across North America. There are two groups of servers. One group of servers **handles requests** from all clients located in the USA while the other group serves **requests** from Canada. When a **client** sends a **request** to the system, a field in the **request** message, defining the location of the **client**, is passed to the system. The TP monitor is then able to route the **request** to the correct group of servers (USA or Canada) based upon information in the **request** message.

Is Reliable Queueing Necessary?

TP monitors provide the ability to enqueue and dequeue **requests** to and from a reliable (stable storage) queue. Both the application and the administrator can control the order of the messages (service **requests**) in the queue. Messages can be ordered LIFO, FEFO, time based, priority, or by some...

...can be forwarded to the home office via a WAN, and the updates can be

replicated in the home office database. The queuing system can be used to assure that every...transaction monitors.

BEA TUXEDO - provides a robust middleware engine for developing and deploying business-critical **client/server** applications. BEA TUXEDO handles not only distributed transaction processing, but also application and the full...

...functionality of the toolkit to provide a comprehensive environment for developing and deploying distributed transaction **processing**.

Microsofts Transaction **Server** (Viper) - a component-based transaction processing system for developing, deploying, and managing high performance, and...

...although many are on the way). Encina adds primarily a transactional element and some

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load balancing services to RPC's. It also provides an easier interface to work with (although it...

...very scalable and services can be on any machine in the network. Finally, Encina's **load balancing** is quite good, much better than native DCE or Tuxedo.

Tuxedo
Functionality
Can handle a...

...message delivery using a stable storage queue (/Q)
Future service delivery using /Q (usually for **batch** processing)
Can prioritize messages- most important get processed sooner.

Supports many platforms (all UNIX, NT...

...for basic c/s messaging

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Supports conversational messaging between a client and a specific **server**

Peer-to-peer, **client-to-client** messaging is supported

Unsolicited messaging is supported for client processes

Asynchronous service calls can be made by **client** and **server**

processes

Synchronous service calls can be made by **client** and **server**

processes

Synchronous calls that receive no return message are supported

Very good security- must connect to...

...write to the LTLOG with a Tuxedo API (error logging provided) Automatic process monitor for **process** that die or machines that get partitioned

Service location independency (distribution/directory services)

Platform independency...Services coordinate transactions across one or more resource managers either on a single machine or **multiple**

machines within the **network**. Transaction **Management** Services

ensure that all resources for a transaction are updated, or in the case of...

...rolled back.

This services that allow multiple applications to share data with integrity. The transaction **management** services help implement the notion of a transaction -- a set of computations producing changes to...

...of a completed transaction are persistent.

Two-Phase Commit is a feature found in distributed **database management** systems and online transaction processing (OLTP) monitors to ensure information integrity across distributed databases. With...database engine/server, it needs to know, during startup, various information like - database name, the **server** name, login ID, etc. Instead of hard coding all these information in the application executable...

...free disk space, monitor resolution, correct version). These services are invoked when an application begins **processing** or when a component is called. Applications can use these services to verify that the...

...required Execution Architecture components and other application components are Hable.

aval
implementation considerations
205

In **client/server** applications, it may be necessary to implement Environment Venification Services to ensure that the **client** and **server** applications are of a compatible release level.

ActiveX framework provides services for automatic installation and...
...to control io individual computer tasks or processes, and manage memory. They provide services for **scheduling**, starting, stopping, and restarting both **client** and **server** tasks (e.g., software agents).

Implementation considerations
Memory management, the allocating and freeing of system...

...employees, customers) and additional types of transactions (e.g., e-commerce, help-desks). In traditional **client/server** environments most users are employees of the company. In Netcentric environments there are typically also...

...the development effort by reusing common services, etc. These architecture functions perform services such as **database** calls, state **management**, etc.

Application errors are also those which occur during the normal execution of the application...computer (in this paper the term Context Management refers to storing state information on the **server**, not the **client**). **Client/server** architectures simplified or eliminated the need for Context Management (storing state information on the server), and created a need to store state information on the client. Typically, in traditional **client/server** systems this

type of state management (i.e., data sharing) is done on the client...

...the client nor save any information between client exchanges (i.e., web page submits or **requests**). Each HTTP exchange is a completely independent event. Therefore, information entered into one HTML fann...

...Netcentric technologies now offer additional options for implementing state i 0 management on both the **client** and **server** machines.

Possible Product Options

NetDynamics Inc. NetDynamics

NetDynamrncs Inc. NetDynamics

1 5 NetDynamics provides built...

...currently viewing can be maintained in the PE. NetDynamics maintains state information on both the **server** and on the client page. Application state information is maintained by the application server, and...

...211

Code/decode information can be stored at any layer of an n-tier architecture - **client**, application **server**, or database. The decision will need to be based upon codes table size and number...

...the client operate in different date/time zone?

In most large scale distributed applications, the **client** and the **server** applications (or machines) are scattered over different time zones. This forces the client applications and...standards. These standards define how components should be built and how they should communicate.

Object **Request** Broker (ORB) services, based on COM/DCOM and CORBA, focus on how components communicate. Component...

...one of the more popular uses of OpenDoc tools is for creating and implementing OLE **clients** and **servers**. Because OpenDoc provides a more manageable set of APIs than OLE, it may be that...

...Environment (ONE) is an object-oriented software framework from Netscape Communications for use with Internet **clients** and **servers**, which enables the integrating of Web **clients** and **servers** with other enterprise resources and data. By

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supporting CORBA, ONE-enabled systems will be...data within the domain of that component. For example, a Customer Domain component might be **requested** to determine if it's credit limit had been exceeded when provided with a new...

...services support the following.

Managing documents in most formats such as HTML, Microsoft Word, etc.

Handling of client **requests** for HTML pages. A Web browser initiates an HTTP **request** to the Web server either specifying the HTML document to send back to the browser...

...of the Web server environment. For example, server side scripts can be used to process **requests** for additional information, such as data

from an RDBMS.

Caching Web pages. The first time a user **requests** a Web page, the Web server retrieves that page from the network and stores it...

...a cache (memory on the Web server). When another page or the same page is **requested**, the Web server first checks to see if the page is available in the cache...Server Services.

Netscape Enterprise Web Server

An enterprise-strength Web server that enables organizations to **manage** and publish their information and deploy Netcentric applications. Netscape Enterprise Web Server is built on...

...A multi-threaded HTTP server that provides integrated features for translating and dispatching client HTTP **requests** directly to the Oracle7 Server using PL/SQL.

Push Pull Services (2840)
Push/Pull Services...

...the type of content they want to receive.

Content providers then seek to package the **requested** information for automatic distribution to the user's PC.

Depending upon requirements, synchronous or asynchronous...

...where no user involvement is required as well as reporting. Areas for design attention include **scheduling**, recovery/restart,
221
use of job streams and high availability (e.g. 24 hour running...

...billing, etc. and can also include report generation. This is an often overlooked area in **client/server** architectures.

to Traditional **client/server** solutions and Netcentric solutions often require batch processing, but unlike the mainframe, the typical platforms...

...framework for the reporting system.

Report Definition Services. These services receive and identify the report **request**, perform required validation routines, and format the outputted report(s). After the **request** is validated, the report build function is initiated.

Report Build Services. These services are responsible...

...223

The report architecture within Environment Services supports the generation and delivery of reports. Applications **request** report services by sending a message to the reporting framework.

The following types of reports are supported by the reporting application framework.

Scheduled: **Scheduled** reports are generated based upon a time and/or date requirement.

These reports typically contain...

...and are generated periodically (invoices and bills, for example).

33/3,K/5 (Item 5 from file: 349)
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00784184 **Image available**
A SYSTEM, METHOD FOR FIXED FORMAT STREAM COMMUNICATION IN A COMMUNICATION
SERVICES PATTERNS ENVIRONMENT
SYSTEME, PROCEDE ET ARTICLE POUR FLUX DE FORMAT FIXE DANS UN ENVIRONNEMENT
A CONFIGURATIONS DE SERVICES DE COMMUNICATION
Patent Applicant/Assignee:
ACCENTURE LLP, 1661 Page Mill Road, Palo Alto, CA 94304, US, US
(Residence), US (Nationality)
Inventor(s):
BOWMAN-AMUAH Michel K, 6426 Peak Vista Circle, Colorado Springs, CO 80918
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Legal Representative:
HICKMAN Paul L (agent), Oppenheimer Wolff & Donnelly LLP, P.O. Box 52037,
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DE DK DZ EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL
TJ TM TR TT UA UG UZ VN YU ZA ZW
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Claims

Claim

... good way to scope the solution space. This results in a good context
for making **process** and application decisions. Finally, Business
Components provide a common vocabulary for the project team. They...
consumer-to-business transactions. To do this, the Web must evolve into a
full-blown **client/server** medium that can run your
line-of-business applications (i.e., a delivery vehicle for...

...using object technology. For the same reason (i.e., standard
interfaces), it is possible to **request** a component's services from
any platform. That's not true of objects, unless they...could be used to

manage a variety of things: conference rooms, fixed assets, work in **process**, finished goods, and leased frequencies.

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So one can start out building an inventory management...

...technology must be justified in business rather than technology terms.

In many cases, a traditional **client/server** solution can deliver the benefits. This proves especially true for short-lived, simple, or moderately...knowledge workers needing flexible navigation. Reduces system test complexity and cost

In a few different **instances**, the object-oriented development approach has significantly reduced system test complexity. In all these cases the projects fell behind **schedule** due to learning curve, the complexity of custom architecture development, and increased effort for component...

...functionality and performance was much easier. For example, since less code and data knowledge was **replicated** throughout the system, global changes could often be made by making a change in one...core business components that represent the business directly in software.

These components perform behaviors upon **request** by windows, reports, or batch process control objects. The presence of a component model distinguishes component-based systems from procedural, **client/server** systems. In a procedural approach, there is no shared business component model. This typically requires...

...database vendor.

Architecture development must start early

A tension exists between scenarios and frameworks

As with **client/server**, architecture work must start early. As noted above, this is particularly challenging because of the...addition, the extensive reuse of a core business component model requires an organization structure that **manages** it as a shared resource. This creates a tension between the needs to support consistent...

...more. It is also extremely important to have a significant percentage of the team with **client/server** skills, to reduce additional learning curves such as GUI design or **client/server** architecture development.

Estimating and planning present new management challenges

Projects should allow time for start-up...

...mix of waterfall and iteration

Systems development traditionally relies on a waterfall model. This approach **manages** development in sequential phases of activity such as analysis, design, code, and test. The waterfall bridges, performing conversion, and rolling out training are high. These costs must **balance** those introduced by the delayed delivery of business benefits and the risks implied by increasing scope and team size. The urgency of the business and the desire to **manage** development size may sometimes favor an incremental approach.

Commercially available methodologies have a narrow focus...

...component-based system and the variety of technologies associated with it complicate testing and configuration **management**. A component-based system may often have more than ten times as many components as a...

...generally demand even more and deeper skills, unless the team has exceptionally talented individuals, extensive **client/server** experience, and ample time to scale the learning curve. It is important to note that...common to those who have successfully scaled the component management learning curve include:

Experience with **client/server** development and a technical orientation

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Willingness and flexibility to learn new terminology, tools, and...

...roles. While the dual role of building and supporting an architecture exists in a traditional **client/server** system, it may be more pronounced with component technology. Component-based systems require a higher...the training needs during normal work hours for the system to meet a reasonable

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schedule. Thus, at times, individuals must pursue personal study and experimentation after hours. This type of...

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00784143

SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR LOAD BALANCING REQUESTS AMONG SERVERS

SYSTEME, PROCEDE ET ARTICLE POUR EQUILIBREUR DE CHARGE DANS UN ENVIRONNEMENT DE STRUCTURES DE SERVICES

Patent Applicant/Assignee:

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Inventor(s):

BOWMAN-AMUAH Michel K, 6426 Peak Vista Circle, Colorado Springs, CO 80918, US,

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Detailed Description

Claims

Detailed Description

... error information. Transaction Monitor Services, in conjunction with Information Access and Communication Services provide for **load balancing** across processors or machines and location transparency for distributed transaction processing.

Implementation considerations

Does the...

...source messaging capabilities alone.

Does the system require high throughput?

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Because TP monitors provide **load balancing** functionality and because they effectively reduce the number of connections that must be made to...

...are available on multiple platforms and maintain interoperability (communication, data translation, etc.) between heterogeneous resource **managers (databases)** and clients (UNIX, MS Windows NT, etc.). For this reason, projects that intend to support...dependable.

Is the system distributed across multiple nodes?

TP monitors provide common administrative facilities to **manage** groups of servers. These facilities allow a system to be managed from one location with...

...this quality is a candidate for a TP monitor.

Is the system not a transaction **processing** system?

Although TP monitors provide global two-phase commit "transaction processing" functionality, systems that do not need this feature can also benefit by using TP monitors. For example, the **load-balancing** feature in itself can help increase system performance. Also, the administrative facilities can help simplify system management.

Is Data Dependent Routing Necessary?

Data Dependent Routing is the ability to route **requests** to a particular **server** based upon the data passed within the **request**. TP monitors can provide this functionality.

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e.g. A system has several servers accepting **requests** from clients dispersed across North America. There are two groups of **servers**. One group of servers **handles requests** from all clients located in the USA while the other group serves **requests** from Canada. When a client sends a **request** to the system, a field in the **request** message, defining the location of the client, is passed to the system. The TP monitor is then able to route the **request** to the correct group of servers (USA or Canada) based upon information in the **request** message.

Is Reliable Queueing Necessary?

TP monitors provide the ability to enqueue and dequeue **requests** to and from a reliable (stable storage) queue. Both the application and the administrator can control the order of the messages (service **requests**) in the queue. Messages can be ordered LIFO, FIFO, time

based, priority, or by some...

...can be forwarded to the home office via a WAN, and the updates can be **replicated** in the home office database. The queuing system can be used to assure that every...

...Does the client plan to use Windows NT?
On Which platforms/operating systems do the **servers** run?
TP monitor support for NT may be limited.

Some TP monitors are capable of...

...installed base of clients.

Does the system require integration with other 3rd party tools?
The **client** may expect the TP monitor to integrate with an already installed base of 3rd party...transaction monitors.
BEA TUXEDO - provides a robust middleware engine for developing and deploying business-critical **client/server** applications. BEA TUXEDO handles not only distributed transaction processing, but also application and the full...

...and operating systems.

IBMs CICS/6000 - an application server that provides industrial-strength, online transaction **processing** and transaction **management** for mission-critical applications on both IBM and non-IBM platforms. CICS manages and coordinates...

...and integrity of data.

Transares Encina - implements the fundamental services for executing distributed transactions and **managing** recoverable data, and various Encina extended services, which expand upon the functionality of the toolkit to

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provide a comprehensive environment for developing and deploying distributed transaction **processing**.

Microsofts Transaction **Server** (Viper) - a component-based transaction processing system for developing, deploying, and managing high performance, and...

...applications (although many are on the way). Encina adds primarily a transactional element and some **load balancing** services to RPC's. It also provides an easier interface to work with (although it...

...very scalable and services can be on any machine in the network. Finally, Encina's **load balancing** is quite good, much better than native DCE or Tuxedo.

Tuxedo
Functionality

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Can handle...

...Future service delivery using /Q (usually for batch processing)
Can prioritize messages- most important get **processed** sooner.
Supports many platforms (all UNIX, NT, all common **client** platfon-ns)
Tuxedo supports C, C++, and Cobol development
Can be used for basic c...

...supported
Unsolicited messaging is supported for client processes
Asynchronous service calls can be made by **client** and **server processes**
Synchronous service calls can be made by **client** and **server processes**
Synchronous calls that receive no return message are supported
Very good security- must connect to...Management Services.

Transaction Management 2606

Transaction Management Services coordinate transactions across one or more resource **managers** either on a single machine or multiple machines within the **network**. Transaction **Management Services** ensure that all resources for a transaction are updated, or in the case of...

...a completed transaction are persistent.
Two-Phase Conu-nit is a feature found in distributed **database management** systems and online transaction **processing** (OLTP) monitors to ensure infonnation integrity across distributed databases. With this feature, a transaction is...versions of required Execution Architecture components and other application components are available.

Implementation considerations

In **client/server** applications, it may be necessary to implement Environment Verification Services to ensure that the **client** and **server** applications are of a compatible release level.

ActiveX framework provides services for automatic installation and...

...Memory Management Services allow applications and/or other events to control individual computer tasks or **processes**, and manage memory. They provide services for **scheduling**, starting, stopping, and restarting both **client** and **server** tasks (e.g., software agents).

Implementation considerations

Memory management, the allocating and freeing of system...
...employees, customers) and additional types of transactions (e.g., e-commerce, help-desks). In traditional **client/server** environments most users are employees of the company. In Netcentric environments there are typically also...

...the development effort by reusing common services, etc. These architecture functions perform services such as **database** calls, state **management**, etc.

Claim

I A method for distributing incoming **requests** amongst server components for optimizing usage of resources, comprising the steps of
(a) receiving incoming **requests**;
(b) storing the **requests**;
(c) determining an availability of server components;
(d) compiling a listing of available server components...

...component on the listing of available server components is most appropriate to receive a particular **request**; and
(f) sending each particular **request** to the selected server component determined to be most appropriate to receive the particular **request**.

2 A method as recited in claim 1, wherein the step of determining which server component is the most appropriate is performed by allocating the **requests** on a round-robin basis whereby **requests** are assigned to consecutive server components by traversing along the listing of available server components...

...available server components is calculated based on at least two of:
current CPU utilization, kernel **scheduling** run-queue length,
current network traffic at a node to the server component, and a number of **requests** currently being serviced.

5 A method as recited in claim 1, further comprising the step of rerouting a **request** to a different available server component upon a crash of the selected server component.
623...

...be reestablished.

7 A computer program embodied on a computer readable medium for distributing incoming **requests** amongst server components for optimizing usage of resources, comprising:
(a) a code segment that receives incoming **requests**;
(b) a code segment that stores the **requests**;
(c) a code segment that determines an availability of server components;
(d) a code segment...

...component on the listing of available server components is most appropriate to receive a particular **request**; and
(f) a code segment that sends each particular **request** to the selected server component determined to be most appropriate to receive the particular **request**.

8 A computer program as recited in claim 7, wherein the code segment that determines which server component is the most appropriate is performed by allocating the **requests** on a round-robin basis whereby **requests** are assigned to consecutive server components by traversing along the listing of available server components...

...available server components is calculated based on at least two of:
current CPU utilization, kernel **scheduling** run-queue length,
current network traffic at a node to the server component, and a number of **requests** currently being serviced.

11 A computer program as recited in claim 7, further comprising a code

segment that reroutes a **request** to a different available server component upon a crash of the selected server component.
624...

...connection to a server component needs to be reestablished.
13 A system for distributing incoming **requests** amongst server components for optimizing usage of resources, comprising:
(a) logic that receives incoming **requests**;
(b) logic that stores the **requests**;
(c) logic that determines an availability of server components;
(d) logic that compiles a listing...
...component on the listing of available server components is most appropriate to receive a particular **request**; and
(f) logic that sends each particular **request** to the selected server component detennined to be most appropriate to receive the particular **request**.

14 A system as recited in claim 13, wherein the logic that determines which server component is the most appropriate is performed by allocating the **requests** on a roundrobin basis whereby **requests** are assigned to consecutive server components by traversing along the listing of available server components...

...available server components is calculated based on at least two of@ current CPU utilization, kernel **scheduling** run-queue length, current network traffic at a node to the server component, and a number of **requests** currently being serviced.

17 A system as recited in claim 13, ftirther comprising logic that reroutes a **request** to a different available server component upon a crash of the selected server component.
625...

33/3,K/7 (Item 7 from file: 349)
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00784140

A SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR A GLOBALLY ADDRESSABLE INTERFACE IN A COMMUNICATION SERVICES PATTERNS ENVIRONMENT
SYSTEME, PROCEDE ET ARTICLE DE FABRICATION S'APPLIQUANT DANS UN ENVIRONNEMENT DE STRUCTURE DE SERVICES DE COMMUNICATIONS VIA UNE INTERFACE ADRESSABLE GLOBALEMENT

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DZ EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT
LU LV MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR
TT UA UG UZ VN YU ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
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Detailed Description

Detailed Description

... Raptor Systems' Eagle Firewall
routers.

Cisco Systems
Bay Networks
3Com Corp.

Network Address Allocation 2412

Network Address Allocation services **manage** the distribution
of addresses to network nodes.

This provides more flexibility compared to having all...

...a description of various Quality of Service parameters.

connection establishment delay - time between the connection
request and a confirm
being received by the **requester**
connection establishment failure probability - chance that the
connection will not be
established within the maximum...

...technique is the use of prioritized circuits within Frame Relay, in
which the Frame Relay **network** vendor **assigns** different
priorities to different perinariant virtual circuits.

Prioritization techniques are of limited effectiveness if data...
committed or rolled back. When a transaction is committed, all changes
made by the associated **requests** are made perinariant. When a
transaction is rolled back, all changes made by the associated
requests are undone.

Transaction Services provide the transaction integrity mechanism for the
application. This allows all...

...provided by the DBMS software with its re-start/recovery and integrity
capabilities.

For larger **client/server** environments distributed on-line
transaction managers might be more applicable. These transaction managers
provide sharing of **server processes** across a large community

of users and can be more efficient than the DBMSs.

190...

...infori-nation. Transaction Monitor Services, in conjunction with Information Access and Communication Services provide for **load balancing** across processors or machines and location transparency for distributed transaction processing.

Implementation considerations

Does the...

...data source messaging capabilities alone.

Does the system require high throughput?

Because TP monitors provide **load balancing** ftunctionality and because they effectively reduce the number of connections that must be made to...

...are available on multiple platforms and maintain interoperability (communication, data translation, etc.) between heterogeneous resource **managers (databases)** and clients (UNIX, MS Windows NT, etc.). For this reason, projects that intend to support...system not a transaction processing system? Although TP monitors provide global two-phase commit "**transaction processing**" ftunctionality, systems that do not need this feature can also benefit by using TP monitors. For example, the **load-balancing** feature in itself can help increase system performance. Also, the administrative facilities can help simplify system management.

Is Data Dependent Routing Necessary?

Data Dependent Routing is the ability to route **requests** to a particular server based upon the data passed within the **request**. TP monitors can provide this functionality.

e.g. A system has several servers accepting **requests** from clients dispersed across North America. There are two groups of **servers**.

One group of **servers handles requests** from all clients located in the USA while the other group serves **requests** from Canada. When a **client** sends a

194

request to the system, a field in the **request** message, defining the location of the **client**, is passed to the system. The TP monitor is then able to route the **request** to the correct group of servers (USA or Canada) based upon inforination in the **request** message.

Is Reliable Queueing Necessary?

TP monitors provide the ability to enqueue and dequeue **requests** to and from a reliable (stable storage) queue. Both the application and the administrator can control the order of the messages (service **requests**) in the queue. Messages can be ordered LIFO, FIFO, time based, priority, or by some...

...can be forwarded to the home office via a WAN, and the updates can be **replicated** in the home office database. The queuing system can be used to assure that every...in this practice aid, all of them offer varying levels of mainframe connectivity.

Does the **client** have existing personnel with mainframes - CICS

experience? CICS/6000 has a programming interface similar to...

...transaction monitors.

BEA TUXEDO - provides a robust middleware engine for developing and deploying business-critical **client/server** applications. BEA TUXEDO handles not only distributed transaction processing, but also application and the full...

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00784139

A SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR A SELF-DESCRIBING STREAM IN
A COMMUNICATION SERVICES PATTERNS ENVIRONMENT
SYSTEME, PROCEDE ET ARTICLE DE FABRICATION DESTINES A UN FLUX
D'AUTODESCRIPTEURS DANS UN ENVIRONNEMENT DE MODELES DE SERVICES DE
COMMUNICATION

Patent Applicant/Assignee:

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Inventor(s):

BOWMAN-AMUAH Michel K, 6426 Peak Vista Circle, Colorado Springs, CO 80918
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Road, Palo Alto, CA 94304, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200116734 A2-A3 20010308 (WO 0116734)

Application: WO 2000US23999 20000831 (PCT/WO US0023999)

Priority Application: US 99387070 19990831

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ

DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ

LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG

SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 150517

Fulltext Availability:

Detailed Description

Detailed Description

... is not required.

Multicasting - The Packet Forwarding/Internetworking service may support

multicasting, which is the **process** of transferring a single message to multiple recipients at the same time. Multicasting allows a...which allows traffic unless it has been explicitly prohibited.

Possible Product Options

Cisco Systems; Bay **Networks**; 3 Com Corp.; Check Points Firewall-1; Raptor Systems Eagle Firewall; Data Fellows F-Secure...

...Raptor Systems' Eagle Firewall routers.

Cisco Systems
Bay Networks
3Com Corp.

Network Address Allocation 2412

Network Address Allocation services **manage** the distribution of addresses to network nodes.

This provides more flexibility compared to having all...of various Quality of Service parameters.

1 5 connection establishment delay - time between the connection **request** and a confirm being received by the **requester**
connection establishment failure probability - chance that the connection will not be established within the maximum...

...technique is the use of prioritized circuits within Frame Relay, in which the Frame Relay **network** vendor **assigns** different priorities to different permanent virtual circuits.

Prioritization techniques are of limited effectiveness if data...

...on the same network/subnetwork.

Shared Access - The Media Access service provides a method for **multiple** network nodes to share access to a physical **network**. Shared Access schemes include the following.

CSMA/CD - Carrier Sense Multiple Access with Collision Detection. A... committed or rolled back. When a transaction is committed, all changes made by the associated **requests** are made permanent. When a transaction is rolled back, all changes made by the associated **requests** are undone.

Transaction Services provide the transaction integrity mechanism for the application. This allows all...

...provided by the DBMS software with its re-start/recovery and integrity capabilities.

For larger **client/server** environments distributed on-line transaction managers might be more applicable. These transaction managers provide sharing of **server processes** across a large community of users and can be more efficient than the DBMSs.

190...

...infon-nation. Transaction Monitor Services, in conjunction with Information Access and Communication Services provide for **load balancing** across processors or machines and location transparency for distributed transaction **processing**.

Implementation considerations

Does the system access nonrelational data?

Some TP monitors provide a method of...

...data source messaging capabilities alone.

Does the system require high throughput?

Because TP monitors provide **load balancing** functionality and because they effectively reduce the number of connections that must be made to...

...are available on multiple platforms and maintain interoperability (communication, data translation, etc.) between heterogeneous resource **managers (databases)** and clients (UNIX, MS Windows NT, etc.). For this reason, projects that intend to support...strength of TP monitors is their ability to ensure a global two-phase commit over **multiple**, heterogeneous databases. A system that has this quality is a candidate for a TP monitor...

...system not a transaction processing system?

Although TP monitors provide global two-phase commit "transaction **processing**" functionality, systems that do not need this feature can also benefit by using TP monitors. For example, the **load-balancing** feature in itself can help increase system performance. Also, the administrative facilities can help simplify system management.

Is Data Dependent Routing Necessary?

Data Dependent Routing is the ability to route **requests** to a particular server based upon the data passed within the **request**. TP monitors can provide this functionality.

e.g. A system has several servers accepting **requests** from clients dispersed across North America. There are two groups of servers. One group of **servers handles requests** from all clients located in the USA while the other group serves **requests** from Canada. When a client sends a

194

request to the system, a field in the **request** message, defining the location of the client, is passed to the system. The TP monitor is then able to route the **request** to the correct group of servers (USA or Canada) based upon information in the **request** message.

Is Reliable Queueing Necessary?

TP monitors provide the ability to enqueue and dequeue **requests** to and from a reliable (stable storage) queue. Both the application and the administrator can control the order of the messages (service **requests**) in the queue. Messages can be ordered LIFO, FIFO, time based, priority, or by some...

...can be forwarded to the home office via a WAN, and the updates can be **replicated** in the home office database. The queuing system can be

used to assure that every...transaction monitors.

BEA TUXEDO - provides a robust middleware engine for developing and deploying business-critical **client/server** applications. BEA TUXEDO handles not only distributed transaction processing, but also application and the full...

...of the toolkit to

198

provide a comprehensive environment for developing and deploying distributed transaction **processing**.

Microsofts Transaction **Server** (Viper) - a component-based transaction

processing system for developing, deploying, and managing high performance, and...

...applications (although many are on the way). Encina adds primarily a transactional element and some **load balancing** services to RPC's. It also provides an easier interface to work with (although it...
...very scalable and services can be on any machine in the network.
Finally, Encina's **load balancing** is quite good, much better than native DCE or Tuxedo.

Tuxedo

Functionality

199

Can **handle** a large number of concurrent client applications
Can handle a large volume of through-put...

33/3,K/9 (Item 9 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00784138

SYSTEM, METHOD, AND ARTICLE OF MANUFACTURE FOR A REQUEST BATCHER IN A TRANSACTION SERVICES PATTERNS ENVIRONMENT
SYSTEME, PROCEDE ET ARTICLE MANUFACTURE POUR MODULE DE MISE EN LOTS DES REQUETES DANS UN ENVIRONNEMENT CARACTERISE PAR DES SERVICES TRANSACTIONNELS

Patent Applicant/Assignee:

ACCENTURE LLP, 1661 Page Mill Road, Palo Alto, CA 94304, US, US
(Residence), US (Nationality)

Inventor(s):

BOWMAN-AMUAH Michel K, 6426 Peak Vista Circle, Colorado Springs, CO 80918
, US,

Legal Representative:

HICKMAN Paul L (agent), Oppenheimer Wolff & Donnelly, LLP, 1400 Page Mills Road, Palo Alto, CA 94304, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200116733 A2-A3 20010308 (WO 0116733)

Application: WO 2000US23885 20000831 (PCT/WO US0023885)

Priority Application: US 99387575 19990831

Designated States: AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CU CZ DE DK
DZ EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT

LU LV MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR
TT UA UG UZ VN YU ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 150393

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... the same network/subnetwork.

Shared Access - The Media Access service provides a method for multiple **network** nodes to share access to a physical network. Shared Access schemes include the following.

CSMA/CD...

...a special control message) among nodes to designate which node has the right to transmit.

multiplexing - A method of sharing physical media among nodes by consolidating **multiple**, independent channels into a single circuit. The independent channels (assigned to nodes, applications, or voice... committed or rolled back. When a transaction is committed, all changes made by the associated **requests** are made

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permanent. When a transaction is rolled back, all changes made by the associated **requests** are undone.

Transaction Services provide the transaction integrity mechanism for the application. This allows all...

...provided by the DBMS software with its re-start/recovery and integrity capabilities.

For larger **client/server** environments distributed on-line transaction managers might be more applicable. These transaction managers provide sharing of **server processes** across a large community of users and can be more efficient than the DBMSs.

Figure...

...error information. Transaction Monitor Services, in conjunction with Information Access and Communication Services provide for **load balancing** across processors or machines and location transparency for distributed transaction **processing**.

Implementation considerations

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187

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...data source messaging capabilities alone.

Does the system require high throughput?

Because TP monitors provide **load balancing** functionality and because they effectively reduce the number of connections that must be made to...

...are available on multiple platforms and maintain interoperability (communication, data translation, etc.) between heterogeneous resource **managers (databases)** and clients (UNIX, MS Windows NT, etc.). For this reason, projects that intend to support...strength of TP monitors is their ability to ensure a global two-phase commit over **multiple, heterogeneous databases**. A system that has this quality is a candidate for a TP monitor...

...not need this feature can also benefit by using TP monitors. For example, the
190
load-balancing feature in itself can help increase System performance. Also, the administrative facilities can help simplify system management.

Is Data Dependent Routing Necessary?

Data Dependent Routing is the ability to route **requests** to a particular server based upon the data passed within the **request**. TP monitors can provide this functionality.

e.g. A system has several servers accepting **requests** from clients dispersed across North America. There are two groups of servers. One group of **servers handles requests** from all clients located in the USA while the other group serves **requests** from Canada. When a client sends a **request** to the system, a field in the **request** message, defining the location of the client, is passed to the system. The TP monitor is then able to route the **request** to the correct group of servers (USA or Canada) based upon information in the **request** message.

Is Reliable Queueing Necessary?

TP monitors provide the ability to enqueue and dequeue **requests** to and from a reliable (stable storage) queue. Both the application and the administrator can control the order of the messages (service **requests**) in the queue. Messages can be ordered LIFO, FIFO, time based, priority, or by some...

...can be forwarded to the home office via a WAN, and the updates can be **replicated** in the home office database. The queuing system can be used to assure that every...transaction monitors.

BEA TUXEDO - provides a robust middleware engine for developing and deploying business-critical **client/server** applications. BEA TUXEDO handles not only distributed transaction processing, but also application and the full...

...ftinctionality of the toolkit to provide a comprehensive environment for developing and deploying distributed transaction **processing**.

Microsofts Transaction **Server** (Viper) - a component-based transaction processing system for developing, deploying, and managing high

performance, and...

...of functions including security services, RPC's, a directory service (like a yellow pages for **clients** to find services) and a standard time service, and it is truly cross-platform and...

...although many are on the way). Encina adds primarily a transactional element and some

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load balancing services to RPC's. It also provides an easier interface to work with (although it...

...very scalable and services can be on any machine in the network. Finally, Encina's **load balancing** is quite good, much better than native DCE or Tuxedo.

Tuxedo

Functionality

Can handle a large number of concurrent client applications

Can **handle** a large volume of through-put (ex. 1 000+ TPS)

Scaleable (handle many clients or...

...delivery using a stable storage queue (/Q)

Future service delivery using /Q (usually for batch **processing**)

Can prioritize messages- most important get processed sooner.

Supports many platforms (all UNIX, NT, all...

...development

Can be used for basic c/s messaging

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Supports conversational messaging between a **client** and a specific server

Peer-to-peer, client-to-**client** messaging is supported

Unsolicited messaging is supported for client processes

Asynchronous service calls can be made by **client** and **server processes**

Synchronous service calls can be made by **client** and **server processes**

Synchronous calls that receive no return message are supported

Very good security- must connect to...

...be used to develop highly-available systems (240)

Has been implemented with PowerBuilder, VisualBasic, Motif **clients**, and unix batch systems.

Claim

I A method for **batching** logical **requests** for reducing network traffic, comprising the steps of

(a) providing a group of business objects...

...3 A method as recited in claim 1, further comprising the steps of unpackaging the **requests** from the message at a point across a network and persisting data changes.

4 A method as recited in claim 1, further comprising the steps of receiving responses to the **requests** and bundling the responses into a reply.

5 A method as recited in claim 1, further comprising the step of **sorting** the **requests** in the message.

6 A method as recited in claim 5, further comprising the step of separating the **requests** in the messages into submessages.

7 A computer program embodied on a computer readable medium for **batching** logical **requests** for reducing network traffic, comprising:
(a) a code segment that provides a group of business...

...transaction in
a logical unit of work;
(c) a code segment that groups logically-related **requests** received from the logical unit of. A computer program as recited in claim 7, further...

...computer program as recited in claim 7, further comprising a code segment that unpackages the **requests** from the message at a point across a network and a code segment that persists...

...as recited in claim 7, further comprising a code segment that receives responses to the **requests** and a code segment that bundles the responses into a reply.

11 A computer program as recited in claim 7, further comprising a code segment that **sorts** the **requests** in the message.

12 A computer program as recited in claim 11, further comprising a code segment that separates the **requests** in the messages into submessages.

13 A system for **batching** logical **requests** for reducing network traffic, comprising: (a) logic that provides a group of business objects necessary...

...to the transaction in a logical unit of work;
(c) logic that groups logically-related **requests** received from the logical unit of work into a single network message;
(d) logic that...

...message.

15 A system as recited in claim 13, further comprising logic that unpackages the **requests** from the message at a point across a network and logic that persists data changes...

...A system as recited in claim 13, further comprising logic that receives responses to the **requests** and logic that bundles the responses into a reply.

17 A system as recited in claim 13, further comprising logic that **sorts** the **requests** in the message.

18 A system as recited in claim 17, further comprising logic that separates the **requests** in the messages into submessages.
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33/3,K/10 (Item 10 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00784137

SYSTEM, METHOD, AND ARTICLE OF MANUFACTURE FOR DISTRIBUTED GARBAGE
COLLECTION IN ENVIRONMENT SERVICES PATTERNS

SYSTEME, PROCEDE ET ARTICLE DE FABRICATION EN MATIERE DE RECUPERATION
D'ESPACE REPARTI DANS DES MOTIFS DE SERVICES D'ENVIRONNEMENT

Patent Applicant/Assignee:

ACCENTURE LLP, 1661 Page Mill Road, Palo Alto, CA 94304, US, US
(Residence), US (Nationality)

Inventor(s):

BOWMAN-AMUAH Michel K, 6416 Peak Vista Circle, Colorado Springs, CO 80918
, US,

Legal Representative:

HICKMAN Paul L (agent), Oppenheimer Wolff & Donnelly, LLP, 1400 Page Mill
Road, Palo Alto, CA 94304, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200116729 A2-A3 20010308 (WO 0116729)

Application: WO 2000US24238 20000831 (PCT/WO US0024238)

Priority Application: US 99386435 19990831

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DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ

LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG

SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 150959

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... technique is the use of prioritized circuits within Frame Relay, in which the Frame Relay **network** vendor **assigns** different priorities to different permanent virtual circuits.

Prioritization techniques are of limited effectiveness if data independent channel is assigned its own periodic slot.

frequency division **multiplexing** (FDM) - each independent channel is assigned its own frequency range, allowing all channels to be...

...rolled 1 5 back. When a transaction is committed, all changes made by the associated **requests** are made permanent. When a transaction is rolled back, all changes made by the associated **requests** are

undone.

Transaction Services provide the transaction integrity mechanism for the application. This allows all...

...by the DBMS software with its re-start/recovery and integrity capabilities.

188

For larger **client/server** environments distributed on-line transaction managers might be more applicable. These transaction managers provide sharing of **server processes** across a large community of users and can be more efficient than the DBMSs.

Figure...

...error information. Transaction Monitor Services, in conjunction with Information Access and Communication Services provide for **load balancing** across processors or machines and location transparency for distributed transaction processing.

Implementation considerations
Does the...

...source messaging capabilities alone.

Does the system require high throughput?

189

Because TP monitors provide **load balancing** functionality and because they effectively reduce the number of connections that must be made to...are available on multiple platforms and maintain interoperability (communication, data translation, etc.) between heterogeneous resource **managers (databases)** and clients (UNIX, MS Windows NT, etc.). For this reason, projects that intend to support...

...do not need this feature can also benefit by using TP monitors. For example, the **load-balancing** feature in itself can help increase system performance. Also, the administrative facilities can help simplify system management.

Is Data Dependent Routing Necessary?

Data Dependent Routing is the ability to route **requests** to a particular server based upon the data passed within the **request**. TP monitors can provide this functionality.

192

e.g. A system has several servers accepting **requests** from clients dispersed across North America. There are two groups of servers. One group of servers **handles requests** from all clients located in the USA while the other group serves **requests** from Canada. When a client sends a **request** to the system, a field in the **request** message, defining the location of the client, is passed to the system. The TP monitor is then able to route the **request** to the correct group of servers (USA or Canada) based upon information in the **request** message.

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...can be forwarded to the home office via a WAN, and the updates can be **replicated** in the home office database. The queuing system can be used to assure that every...transaction monitors.

33/3,K/11 (Item 11 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00784136

A SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR BUSINESS LOGIC SERVICES PATTERNS IN A NETCENTRIC ENVIRONMENT
SYSTEME, PROCEDE ET ARTICLE DE FABRICATION POUR STRUCTURES DE SERVICES DE LOGIQUE DE COMMERCE DANS UN ENVIRONNEMENT S'ARTICULANT AUTOUR DE L'INTERNET

Patent Applicant/Assignee:

ACCENTURE LLP, 1661 Page Mill Road, Palo Alto, CA 94304, US, US
(Residence), US (Nationality)

Inventor(s):

BOWMAN-AMUAH Michel K, 6426 Peak Vista Circle, Colorado Springs, CO 80918, US,

Legal Representative:

HICKMAN Paul L (agent), Oppenheimer Wolff & Donnelly, LLP, 38th Floor, 2029 Century Park East, Los Angeles, CA 90067-3024, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200116728 A2-A3 20010308 (WO 0116728)
Application: WO 2000US24197 20000831 (PCT/WO US0024197)
Priority Application: US 99387658 19990831

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
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(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 150863

Fulltext Availability:

Detailed Description
Claims

Detailed Description

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...the right to transmit.

multiplexing - A method of sharing physical media among nodes by consolidating **multiple**, independent channels into a single circuit. The independent channels (assigned to nodes, applications, or voice calls) can be combined in the following ways.

time division **multiplexing** (TDM) - use of a circuit is divided into a series of time slots, and each...committed or rolled back. When a transaction is committed, all changes made by the associated **requests** are made permanent. When a transaction is rolled back, all changes made by the associated **requests** are undone.

Transaction Services provide the transaction integrity mechanism for the application. This allows all...

...by the DBMS software with its re-start/recovery and integrity capabilities.

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Figure...

...error information. Transaction Monitor Services, in conjunction with Information Access and Communication Services provide for **load balancing** across processors or machines and location transparency for distributed transaction processing.

Implementation considerations
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...source messaging capabilities alone.

Does the system require high throughput?

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Because TP monitors provide **load balancing** functionality and because they effectively reduce the number of connections that must be made to...

...are available on multiple platforms and maintain interoperability (communication, data translation, etc.) between heterogeneous resource **managers (databases)** and clients (UNIX, MS Windows NT, etc.). For this reason, projects that intend to support...monitors can access databases and services running on mainframe systems. TP monitors frequently include mainframe **networking** capability and maintain transaction rollback during mainframe accesses. If access to the legacy system is...

...this quality is a candidate for a TP monitor.

Is the system not a transaction **processing** system?

Although TP monitors provide global two-phase commit "transaction processing" functionality, systems that do not need this feature can also benefit by using TP monitors. For example, the **load-balancing** feature in itself can help increase system performance. Also, the administrative facilities can help simplify system management.

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...can be forwarded to the home office via a WAN, and the updates can be **replicated** in the home office database. The queuing system can be used to assure that every...

...TOP END are best suited to fresh installations.

192

Does the system use PC-based **clients**?

Each TP monitor offers different support for PC-based clients. TUXEDO and TOP END currently...in this practice aid, all of them offer varying levels of mainframe connectivity.

Does the **client** have existing personnel with mainframes - CICS experience? CICS/6000 has a programming interface similar to...

...transaction monitors.

BEA TUXEDO - provides a robust middleware engine for developing and deploying business-critical **client/server** applications. BEA TUXEDO handles not only distributed transaction processing, but also application and the ftill...

...of the toolkit to

194

provide a comprehensive environment for developing and deploying distributed transaction **processing**.

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...applications (although many are on the way). Encina adds primarily a transactional element. and some **load balancing** services to RPC's. It also provides an easier interface to work with (although it...

...very scalable and services can be on any machine in the network. Finally, Encina's **load balancing** is quite good, much better than native DCE or Tuxedo.

Tuxedo

Functionality

Can handle a...

...prioritize messages- most important get processed sooner.

Supports many platforms (all UNIX, NT, all common **client** platforins)

Tuxedo supports C, C++, and Cobol development

I O Can be used for basic...

...server

Peer-to-peer, client-to-client messaging is supported

Unsolicited messaging is supported for **client processes**

Asynchronous service calls can be made by **client** and **server processes**

Synchronous service calls can be made by **client** and **server processes**

Synchronous calls that receive no return message are supported

Very good security- must connect to...design.

Difficult to debug servers

Does not work well with Pure Software products: Purify, Quantify

Servers must be programmed to support client context data management

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Difficult to do asynch messaging...

...Services coordinate transactions across one or more resource managers either on a single machine or **multiple** machines within the **network**. Transaction **Management** Services ensure that all resources for a transaction are updated, or in the case of...

...update failure on any one resource, all updates are rolled back.

This services that allow **multiple** applications to share data with integrity. The transaction management services help implement the notion of...

...a completed transaction are persistent.

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Two-Phase Commit is a feature found in distributed **database management** systems and online

I information integrity across distributed

transact on processing (OLTP) monitors to ensure...

...Services provide support for mapping a single logical transaction in an

application into the required **multiple** physical transactions. For example, in a package or legacy rich environment, the single logical transaction...

...applications can use to perform system-level functions. These services include.

System Security Services, Profile **Management** Services, Task and Memory Management Services, and Environment Verification Services.

System Security 2710

System Security...can be stored in the profile file for flexibility. In the future, if the database **server** name should change, this change only needs to be entered in the applications profile file...

...free disk space, monitor resolution, correct version). These services are invoked when an application begins **processing** or when a component is called. Applications can use these services to verify that the...

...versions of required Execution Architecture components and other application components are available.

Implementation considerations

In **client/server** applications, it may be necessary to implement Environment Verification Services to ensure that the **client** and **server** applications are of a compatible release level.

ActiveX framework provides services for automatic installation and...

...events to control individual computer tasks or processes, and manage memory. They provide services for **scheduling**, starting, stopping, and restarting both **client** and **server** tasks (e.g., software agents).

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Implementation considerations

Memory management, the allocating and freeing of...

...employees, customers) and additional types of transactions (e.g., e-commerce, help-desks). In traditional **client/server** environments most users are employees of the company. In Netcentric environments there are typically also...

...the development effort by reusing common services, etc. These architecture functions perform services such as **database** calls, state **management**, etc.

Application errors are also those which occur during the normal execution of the application...

...may be for an intranet type application).

Logging can add much stress to a Web **server** and logs can grow very large, very quickly, so do not plan to log all...computer (in this paper the term Context Management refers to storing state information on the **server**, not the **client**). **Client/server** architectures simplified or eliminated the need for Context Management (storing state information on the server), and created a need to store

state information on the client. Typically, in traditional **client/server** systems this type of state management (i.e., data sharing) is done on the client...

...the client nor save any information between client exchanges (i.e., web page submits or **requests**). Each HTTP exchange is a completely independent event. Therefore, information entered into one HTML form...
...Advances in Netcentric technologies now offer additional options for implementing state management on both the **client** and **server** machines.

33/3,K/12 (Item 12 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00784135

A SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR A LOCALLY ADDRESSABLE INTERFACE IN A COMMUNICATION SERVICES PATTERNS ENVIRONMENT
SYSTEME, PROCEDE ET ARTICLE DE PRODUCTION METTANT EN OEUVRE UNE INTERFACE ADRESSABLE LOCALEMENT DANS UN ENVIRONNEMENT DE CONFIGURATIONS DE SERVICES DE COMMUNICATION

Patent Applicant/Assignee:

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(Residence), US (Nationality)

Inventor(s):

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Legal Representative:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200116727 A2-A3 20010308 (WO 0116727)

Application: WO 2000US24189 20000831 (PCT/WO US0024189)

Priority Application: US 99387064 19990831

Designated States: AL AM AT AU AZ BA BB BG BR CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

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(EA) AM AZ BY KG KZ MD RU TJ TM

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Fulltext Availability:

Detailed Description

Claims

Detailed Description

... technique is the use of prioritized circuits within Frame Relay, in which the Frame Relay **network** vendor **assigns** different priorities to different permanent virtual circuits.

Prioritization techniques are of limited effectiveness if data...

...a special control message) among nodes to designate which node has the right to transmit.

multiplexing - A method of sharing physical media among ...of time slots, and each independent channel is assigned its own periodic slot.

frequency division **multiplexing** (FDM) - each independent channel is assigned its own frequency range, allowing all channels to be...

...committed or rolled back. When a transaction is committed, all changes made by the associated **requests** are made permanent. When a transaction is rolled back, all changes made by the associated **requests** are undone.

Transaction Services provide the transaction integrity mechanism for the application. This allows all...

...by the DBMS software with its re-start/recovery and integrity capabilities.

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For larger **client/server** environments distributed on-line transaction managers might be more applicable. These transaction managers provide sharing of **server processes** across a large community of users and can be more efficient than the DBMSs.

Figure...

...error information. Transaction Monitor Services, in conjunction with Information Access and Communication Services provide for **load balancing** across processors or machines and location transparency for distributed transaction processing.

1 5 Implementation considerations...

...source messaging capabilities alone.

Does the system require high throughput?

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Because TP monitors provide **load balancing** functionality and because they effectively reduce the number of connections that must be made ...are available on multiple platforms and maintain interoperability (communication, data translation, etc.) between heterogeneous resource **managers (databases)** and clients (UNIX, MS Windows NT, etc.). For this reason, projects that intend to support...

...this quality is a candidate for a TP monitor.

Is the system not a transaction **processing** system?

Although TP monitors provide global two-phase commit "transaction processing" functionality, systems that do not need this feature can also benefit by using TP monitors. For example, the **load-balancing** feature in itself can help increase system performance. Also, the administrative facilities can help simplify system management.

Is Data Dependent Routing Necessary?

Data Dependent Routing is the ability to route **requests** to a particular server based upon the data passed within the **request**. TP monitors can provide this functionality.

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e.g. A system has several **servers** accepting **requests** from clients dispersed across North America. There are two groups of servers. One group of servers **handles requests** from all **clients** located in the USA while the other group serves **requests** from Canada. When a **client** sends a **request** to the system, a field in the **request** message, defining the location of the client, is passed to the system. The TP monitor is then able to route the **request** to the correct group of **servers** (USA or Canada) based upon information in the **request** message.

Is Reliable Queueing Necessary?

TP monitors provide the ability to enqueue and dequeue **requests** to and from a reliable (stable storage) queue. Both the application and the administrator can control the order of the messages (service **requests**) in the queue. Messages can be ordered LIFO, FIFO, time based, priority, or by some...

...can be forwarded to the home office via a WAN, and the updates can be **replicated** in the home office database. The queuing system can be used to assure that every...transaction monitors.

BEA TUXEDO - provides a robust middleware engine for developing and deploying business-critical **client/server** applications. BEA TUXEDO handles not only distributed transaction processing, but also application and the fall...

...IBMs CICS/6000 - an application server that provides industrial-strength, online transaction processing and transaction **management** for mission-critical applications on both IBM and non-IBM platforms. CICS manages and coordinates...

...of the toolkit to

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provide a comprehensive environment for developing and deploying distributed transaction **processing**.

Microsofts Transaction **Server** (Viper) - a component-based transaction processing system for developing, deploying, and managing high performance, and...

...applications (although many are on the way). Encina adds primarily a transactional element and some **load balancing** services to RPC's. It also provides an easier interface to work with (although it...

...very scalable and services can be on any machine in the network. Finally, Encina's **load balancing** is quite good, much better than native DCE or Tuxedo.

Tuxedo
Functionality

Can handle a...

...client applications

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Can handle a large volume of through-put (ex. 1000+ TPS)
Scaleable (**handle** many clients or a few without code rewrite)
Supports Transactions, including XA transactions
Has its...

...Future service delivery using /Q (usually for batch processing)
Can prioritize messages- most important get **processed** sooner.

Supports many platforms (all UNIX, NT, all common client platforms)
Tuxedo supports C, C...

...supported

Unsolicited messaging is supported for client processes
Asynchronous service calls can be made by **client** and **server**
processes
Synchronous service calls can be made by **client** and **server**
processes
Synchronous calls that receive no return message are supported
Very good security- must connect...A server can be called based on data
in the message (Data Dependent Routing) Customizable **server**
start-up and shutdown restrictions are automatically called.

/Domains allow independent Tuxedo regions to share...

...get admin and system monitoring data for custom operation tools
JOLT Oava to access Tuxedo **servers**)
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Other Reasons to Use Tuxedo
Tuxedo is the market leader OLTP
Tuxedo is a...

...can be very costly.

Single threaded servers requires an upfront packaging design.

Difficult to debug **servers**
Does not work well with Pure Software products: Purify, Quantify
Servers must be programmed to...

...Services coordinate transactions across one or more resource managers
either on a single machine or **multiple** machines within the
network. Transaction **Management** Services ensure that all
resources for a transaction are updated, or in the case of...

...update failure on any one resource, all updates are rolled back.

This services that allow **multiple** applications to share data with
integrity. The transaction management services help implement the notion
of...

...a completed transaction are persistent.

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Two-Phase Commit is a feature found in distributed **database**

management systems and online transaction processing (OLTP) monitors to ensure information integrity across distributed databases...

...Services provide support for mapping a single logical transaction in an application into the required **multiple** physical transactions. For example, in a package or legacy rich environment, the single logical... free disk space, monitor resolution, correct version). These services are invoked when an application begins **processing** or when a component is called. Applications can use these services to verify that the...

...versions of required Execution Architecture components and other application components are available.

Implementation considerations

In **client/server** applications, it may be necessary to implement Environment Verification Services to ensure that the **client** and **server** applications are of a compatible release level.

ActiveX framework provides services for automatic installation and...

...events to control individual computer tasks or processes, and manage memory. They provide services for **scheduling**, starting, stopping, and restarting both **client** and **server** tasks (e.g., software agents).

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Implementation considerations

Memory management, the allocating and freeing of...

...employees, customers) and additional types of transactions (e.g., e-commerce, help-desks). In traditional **client/server** environments most users are employees of the company. In Netcentric environments there are typically also...the development effort by reusing common services, etc. These architecture functions perform services such as **database** calls, state **management**, etc.

Application errors are also those which occur during the normal execution of the application...

...may be for an intranet type application).

Logging can add much stress to a Web **server** and logs can grow very large, very quickly, so do not plan to log all...

...computer (in this paper the term Context Management refers to storing state information on the **server**, not the **client**).

Client/server architectures simplified or eliminated the need for Context Management (storing state information on the server), and created a need to store state information on the client. Typically, in traditional **client/server** systems this type of state management (i.e., data sharing) is done on the client...

...client nor save any information between client exchanges (i.e., web page submits or **requests**). Each HTTP exchange is a completely independent event. Therefore, information entered into one HTML form...

...Advances in Netcentric technologies now offer additional options for implementing state management on both the **client** and **server**

machines.

...ARCHITECTURE

The report architecture within Environment Services supports the generation and delivery of reports. Applications **request** report services by sending a message to the reporting framework.

The following types of reports are supported by the reporting application framework.

Scheduled: **Scheduled** reports are generated based upon a time and/or date requirement.

These reports typically contain...

...and are generated periodically (invoices and bills, for example).

On-demand: Some reports will be **requested** by users with specific parameters. The **scheduling** of these reports, the formatting, and/or the data requirements are not known before the **request** is made, so these factors must be **handled** at **request** time.

Event-driven: This report type includes reports whose generation is triggered based on a...

...is the interface for reporting applications into the report architecture. The client initiates a report **request** to the report architecture by sending a message to the report initiation function. The responsibility of report initiation is to receive, identify, and validate the **request** and then trigger the report build process. The main components of reporting initiation are the following.

Receive, identify, and validate a report **request**. The identification function determines general information about the **request**, such as report type, **requester**, quantity to be printed, and **requested** time. Based on the report type, a table of reports is examined in order to gather additional report-specific information and perform required validation routines for the report **request**. After the report identification and validation functions have been successfully completed, the reporting process can...

...any errors are identified, the report initiation function will return an error message to the **requester** application.

Initiate report execution. The initiate report execution function processes the report profile and specific...

...for the report. This function would utilize the Information Access Services component of the **client/server** architecture.

Format the information. This function is responsible for formatting the collected information into the...

...function will locate completed report files and route them to the appropriate devices within the **client/server** network.

Typically, a report distribution database is used to specify the

destinations for each report...
...architecture relates to a workstation platform technology architecture.

This custom report process is responsible for **processing** all messages **requesting** generation, manipulation, or distribution of reports. The following services are provided in an environment including ...

...modules contain the logic to produce each of
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the report types that may be **requested**. The report process receives generation **requests** and ensures that they are forwarded to the report writer process at the current or specified time. All report **requests** are processed in an asynchronous manner (for example, service **requesters** do not wait for completion of report processing).

Figure 31 describes the relationships between the...
...3100 and the report writer process 3102.

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00784134

A SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR A CONSTANT CLASS COMPONENT
IN A BUSINESS LOGIC SERVICES PATTERNS ENVIRONMENT
SYSTEME, PROCEDE ET ARTICLE MANUFACTURE UN COMPOSANT DE CLASSE DE CONSTANCE
DANS UN ENVIRONNEMENT DE SCHEMAS DE SERVICES DE LOGIQUE D'AFFAIRES

Patent Applicant/Assignee:

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(Residence), US (Nationality)

Inventor(s):

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2029 Century Park East, Los Angeles, CA 90067-3024, US,

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Application: WO 2000US24188 20000831 (PCT/WO US0024188)

Priority Application: US 99387213 19990831

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VN YU ZW

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Fulltext Availability:
Detailed Description

Detailed Description

... etc.) to clients and servers. An intelligent communications fabric provides the following benefits.

An intelligent **network** can **manage** itself, including addressing, routing, security, recovery, etc. It is inefficient for individual **clients** and **servers** to perform such tasks.

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Specialized network components reduce the network-related processing that occurs on **clients** and **servers**.

An intelligent network integrates heterogeneous **clients**, **servers**, and other resources by resolving incompatible protocols and standards.

An intelligent network has the capability...examples of vendors of products that perform Transport-level encryption.

routers.

Cisco Systems

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Bay **Networks**

3Com Corp.

firewalls.

Check Point's Firewall-1

Secure Computing's BorderWare Firewall Server

Raptor...

...Systems' Eagle Firewall

routers.

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Cisco Systems

Bay Networks

3Com Corp.

Network Address Allocation 2412

Network Address Allocation services **manage** the distribution of addresses to network nodes.

This provides more flexibility compared to having all...

...description of various Quality of Service parameters.

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connection establishment delay - time between the connection **request** and a confirm

being received by the **requester**

connection establishment failure probability - chance that the connection will not be

established within the maximum...

...to nodes, applications, or voice calls) can be combined in the following ways.

time division **multiplexing** (TDM) - use of a circuit is divided into a series of time slots, and each independent channel is assigned its own periodic slot.

frequency division **multiplexing** (FDM) - each independent channel is assigned its own frequency range, allowing all channels to be...

T-carrier, E-carrier (e.g., T1, T3, E1, E3)

TDM and FDM (Time Division **Multiplexing** and Frequency Division **Multiplexing**; used on T-carriers, etc.)

SONET, SDH

PPP, SLIP

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V...

...committed or rolled back. When a transaction is committed, all changes made by the associated **requests** are made permanent. When a transaction is rolled back, all changes made by the associated **requests** are undone.

Transaction Services provide the transaction integrity mechanism for the application. This allows all...

...by the DBMS software with its re-start/recovery and integrity capabilities.

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For larger **client/server** environments distributed on-line transaction managers might be more applicable. These transaction managers provide sharing of **server processes** across a large community of users and can be more efficient than the DBMSs.

Figure...

...error information. Transaction Monitor Services, in conjunction with Information Access and Communication Services provide for **load balancing** across processors or machines and location transparency for distributed transaction processing.

Implementation considerations

Does the...

...source messaging capabilities alone.

Does the system require high throughput?

188

Because TP monitors provide **load balancing** functionality and because they effectively reduce the number of connections that must be made to...

...are available on multiple platforms and maintain interoperability (communication, data translation, etc.) between heterogeneous resource **managers (databases)** and clients (UNIX, MS Windows NT, etc.).

For this reason, projects that intend to support...do not need this feature can also benefit by using TP. monitors. For example, the

load-balancing feature in itself can help increase system performance. Also, the administrative facilities can help simplify system management.

Is Data Dependent Routing Necessary?

Data Dependent Routing is the ability to route **requests** to a particular **server** based upon the data passed within the **request**. TP monitors can provide this functionality.

191

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...can be forwarded to the home office via a WAN, and the updates can be **replicated** in the home office database. The queueing system can be used to assure that every...transaction monitors.

BEA TUXEDO - provides a robust middleware engine for developing and deploying business-critical **client/server** applications. BEA TUXEDO handles not only distributed transaction processing, but also application and the full...

...of the toolkit to

195

provide a comprehensive environment for developing and deploying distributed transaction **processing**.

Microsofts Transaction **Server** (Vip@r) - a component-based transaction processing system for developing, deploying, and managing high performance...

...applications (although many are on the way). Encina adds primarily a transactional element and some **load balancing** services to RPC's. It also provides an easier interface to work with (although it...
...very scalable and services can be on any machine in the network. Finally, Encina's **load balancing** is quite good, much better than native DCE or Tuxedo.

Tuxedo

Functionality

Can handle a...

...Can handle a large volume of through-put (ex. 1 000+ TPS)

Scaleable (handle many **clients** or a few without code rewrite)
Supports Transactions, including XA transactions
Has its own transaction...

...message delivery using a stable storage queue (/Q)
Future service delivery using /Q (usually for **batch** processing)
Can prioritize messages- most important get processed sooner.

Supports many platforms (all UNIX, NT...

...Cobol development
Can be used for basic c/s messaging
Supports conversational messaging between a **client** and a specific server
Peer-to-peer, **client**-to-client messaging is supported
Unsolicited messaging is supported for client processes
Asynchronous service calls can be made by **client** and **server processes**
Synchronous service calls can be made by **client** and **server processes**
Synchronous calls that receive no return message are supported
Very good security- must connect to...

...Application code can write to the ULOG with a Tuxedo API (error logging provided) Automatic **process** monitor for **process** that die or machines that get partitioned
Service location independency (distribution/directory services)
Platform independency...Services coordinate transactions across one or more resource managers either on a single machine or **multiple** machines within the **network**. Transaction **Management** Services ensure that all resources for a transaction are updated, or in the case of...

...a completed transaction are persistent.

200

Two-Phase Commit is a feature found in distributed **database management** systems and online information integrity across distributed transaction processing (OLTP) monitors to ensure databases. With...free disk space, monitor resolution, correct version). These services are invoked when an application begins **processing** or when a component is called. Applications can use these services to verify that the...

...of required Execution Architecture components and other application components are Rable.

aval

Implementation considerations

In **client/server** applications, it may be necessary to implement Environment Verification Services to ensure that the **client** and **server** applications are of a compatible release level.

ActiveX framework provides services for automatic installation and...
...events to control individual computer tasks or processes, and manage memory. They provide services for **scheduling**, starting, stopping, and restarting both **client** and **server** tasks (e.g., software

agents).

205

Implementation considerations

Memory management, the allocating and freeing of...

...employees, customers) and additional types of transactions (e.g., e-commerce, help-desks). In traditional **client/server** environments most users are employees of the company. In Netcentric environments there are typically also...

...the development effort by reusing common services, etc. These architecture functions perform services such as **database** calls, state **management**, etc.

Application errors are also those which occur during the normal execution of the application...computer (in this paper the term Context Management refers to storing state information on the **server**, not the **client**). **Client/server** architectures simplified or eliminated the need for Context Management (storing state information on the server), and created a need to store state information on the client. Typically, in traditional **client/server** systems this type of state management (i.e., data sharing) is done on the client...

...the client nor save any information between client exchanges (i.e., web page submits or **requests**). Each HTTP exchange is a completely independent event. Therefore, information entered into one HTML form...

...Advances in Netcentric technologies now offer additional options for implementing state management on both the **client** and **server** machines.

Possible Product Options

NetDynamics Inc. NetDynamics

NetDynamics Inc. NetDynamics

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NetDynamics provides built-in...

...currently viewing can be maintained in the PE. NetDynamics maintains state information on both the **server** and on the client page. Application state information is maintained by the application server, and...

...maintained?

Code/decode information can be stored at any layer of an n-tier architecture - **client**, application **server**, or database. The decision will need to be based upon codes table size and number...

...the client operate in different date/time zone?

In most large scale distributed applications, the **client** and the **server** applications (or machines) are scattered over different time zones. This forces the client applications and...standards. These standards define how components should be built and how they should communicate.

Object **Request** Broker (ORB) services, based on COM/DCOM and CORBA, focus on how components communicate. Component...

...one of the more popular uses of OpenDoc tools is for creating and implementing OLE **clients** and **servers**. Because OpenDoc provides a more manageable set of APIs than OLE, it may be that...

...Environment (ONE) is an object-oriented software framework from Netscape Communications for use with Internet **clients** and **servers**, which enables the integrating of Web **clients** and **servers** with other enterprise resources and data. By supporting CORBA, ONE-enabled systems will be able...data within the domain of that component. For example, a Customer Domain component might be **requested** to determine if it's credit limit had been exceeded when provided with a new ...

...services support the following.

Managing documents in most formats such as HTML, Microsoft Word, etc.

Handling of client **requests** for HTML pages. A Web browser initiates an HTTP **request** to the Web server either specifying the HTML document to send back to the browser...

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00784132

A SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR A LEGACY WRAPPER IN A COMMUNICATION SERVICES PATTERNS ENVIRONMENT
SYSTEME, PROCEDE ET DISPOSITIF POUR MODULE D'HABILLAGE EXISTANT DANS UN ENVIRONNEMENT DE SCHEMAS DE SERVICES DE COMMUNICATION

Patent Applicant/Assignee:

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Inventor(s):

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, US,

Legal Representative:

HICKMAN Paul L (agent), Oppenheimer Wolff & Donnelly, LLP, 1400 Page Mill Roadast, Palo Alto, CA 94304, US,

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DZ EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT
LU LV MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR
TT UA UG UZ VN YU ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

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Fulltext Availability:
Detailed Description

Detailed Description

... is an example of a circuit-switching/packet-forwarding gateway.

Lucent's Internet Telephony Server - **server** software that routes calls from PBXs over the Internet or intranets.

Transport Security 2410
Transport...

...Raptor Systems' Eagle Firewall
routers.

Cisco Systems
Bay Networks
3Com Corp.

Network Address Allocation 2412
Network Address Allocation services **manage** the distribution of addresses to network nodes.

This provides more flexibility compared to having all...a description of various Quality of Service parameters.

connection establishment delay - time between the connection **request** and a confirm being received by the **requester**
connection establishment failure probability - chance that the connection will not be established within the maximum...

...technique is the use of prioritized circuits within Frame Relay, in which the Frame Relay **network** vendor **assigns** different priorities to different pen-nanent virtual circuits.

Prioritization techniques are of limited effectiveness if...T-carrier, E-carrier (e.g., T1, T3, E1, E3)
TDM and FDM (Time Division **Multiplexing** and Frequency Division **Multiplexing**; used on T-carriers, etc.)
SONET, SDH
PPP, SLIP
V.32@ V.34@ V.34...

...committed or rolled back. When a transaction is committed, all changes made by the associated **requests** are made

187

permanent. When a transaction is rolled back, all changes made by the associated **requests** are undone.

Transaction Services provide the transaction integrity mechanism for the application. This allows all...

...the DBMS software with its re-start/recovery and inte i
grity
capabilities.

For larger **client/server** environments distributed on-line transaction managers might be more applicable. These transaction managers provide sharing of **server processes** across a large community of users and can be more efficient than the DBMSs.

Figure...

...information. Transaction Monitor Services, in conjunction with Information Access and Communication Services provide for **load balancing** across processors or machines and location transparency for distributed transaction processing.

Implementation considerations
Does the...

...data source messaging capabilities alone.

Does the system require high throughput?
Because TP monitors provide **load balancing** functionality and because they effectively reduce the number of connections that must be made to...are available on multiple platforms and maintain interoperability (communication, data translation, etc.) between heterogeneous resource **managers (databases)** and clients (UNIX, MS Windows NT, etc.). For this reason, projects that intend to support...

...not need this feature can also benefit by using TP monitors. For example, the
191
load-balancing feature in itself can help increase system performance. Also, the administrative facilities can help simplify system management.

Is Data Dependent Routing Necessary?
Data Dependent Routing is the ability to route **requests** to a particular server based upon the data passed within the **request**. TP monitors can provide this functionality.

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00784125
SYSTEM, METHOD, AND ARTICLE OF MANUFACTURE FOR PIECEMEAL RETRIEVAL IN AN INFORMATION SERVICES PATTERNS ENVIRONMENT
SYSTEME, PROCEDE ET ARTICLE DE FABRICATION DESTINES A LA RECHERCHE FRAGMENTAIRE DANS UN ENVIRONNEMENT DE MODELES DE SERVICES D'INFORMATIONS

Patent Applicant/Assignee:

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VN YU ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

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Fulltext Availability:

Detailed Description

Claims

Detailed Description

... a description of various Quality of Service parameters.

connection establishment delay - time between the connection

request and a confirm

being received by the **requester**

connection establishment failure probability - chance that the connection
will not be

established within the maximum...technique is the use of prioritized
circuits within Frame Relay, in which the Frame Relay **network**
vendor **assigns** different priorities to different permanent virtual
circuits.

Prioritization techniques are of limited effectiveness if data...

...include the following.

CSMAICD - Carrier Sense Multiple Access with Collision Detection. A
method by which **multiple** nodes can access a shared physical media
by "listening" until no other transmissions are detected...

...to nodes, applications, or voice calls) can be combined in the following
ways.

time division **multiplexing** (TDM) - use of a circuit is divided into
a series

of time slots, and each...committed or rolled back. When a transaction is
committed, all changes made by the associated **requests** are made

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permanent. When a transaction is rolled back, all changes made by the
associated **requests** are undone.

Transaction Services provide the transaction integrity mechanism for the
application. This allows all...

...provided by the DBMS software with its re-start/recovery and integrity capabilities.

For larger **client/server** environments distributed on-line transaction managers might be more applicable. These transaction managers provide sharing of **server processes** across a large community of users and can be more efficient than the DBMSs.

Figure...

...error information. Transaction Monitor Services, in conjunction with Information Access and Communication Services provide for **load balancing** across processors or machines and location transparency for distributed transaction processing.

Implementation considerations

Does the...

...data source messaging capabilities alone.

Does the system require high throughput?

Because TP monitors provide **load balancing** functionality and because they effectively reduce the number of connections that must be made to...

...are available on multiple platforms and maintain interoperability (communication, data translation, etc.) between heterogeneous resource **managers (databases)** and clients (UNIX, MS Windows NT, etc.). For this reason, projects that intend to support...system not a transaction processing system?

Although TP monitors provide global two-phase commit "transaction **processing**" functionality, systems that do not need this feature can also benefit by using TP monitors. For example, the
190

load-balancing feature in itself can help increase system performance. Also, the administrative facilities can help simplify system management.

Is Data Dependent Routing Necessary?

Data Dependent Routing is the ability to route **requests** to a particular server based upon the data passed within the **request**. TP monitors can provide this functionality.

e.g. A system has several servers accepting **requests** from clients dispersed across North America. There are two groups of servers. One group of servers **handles requests** from all **clients** located in the USA while the other group serves **requests** from Canada. When a client sends a **request** to the system, a field in the **request** message, defining the location of the client'. is passed to the system. The TP monitor is then able to route the **request** to the correct group of **servers** (USA or Canada) based upon information in the **request** message.

Is Reliable Queueing Necessary?

TP monitors provide the ability to enqueue and dequeue **requests** to and from a reliable (stable storage) queue. Both the application and the administrator can control the order of the messages (service **requests**) in the queue. Messages can be ordered LIFO, FIFO, time based, priority, or by some...

...can be forwarded to the home office via a WAN, and the updates can be **replicated** in the home office database. The queuing system can be used to assure that every...transaction monitors.

BEA TUXEDO - provides a robust middleware engine for developing and deploying business-critical **client/server** applications. BEA TUXEDO handles not only distributed transaction processing, but also application and the full...

...and transaction management for mission-critical applications on both IBM and non-IBM platforms. CICS **manages** and coordinates all the different resources needed by applications, such as RDBMSs, files and message...

...functionality of the toolkit to provide a comprehensive environment for developing and deploying distributed transaction **processing**.

Microsofts Transaction **Server** (Viper) - a component-based transaction processing system for developing, deploying, and managing high performance, and...

...although many are on the way). Encina adds primarily a transactional element and some

195

load balancing services to RPC's. It also provides an easier interface to work with (although it...

...very scalable and services can be on any machine in the network. Finally, Encina's **load balancing** is quite good, much better than native DCE or Tuxedo.

Tuxedo

Functionality

Can handle a large number of concurrent **client** applications

Can handle a large volume of through-put (ex. 1000+ TPS)

Scaleable (handle many...

...Future service delivery using /Q (usually for batch processing)
Can prioritize messages- most important get **processed** sooner.

Supports many platforms (all UNIX, NT, all common client platforms)
Tuxedo supports C, C...

...supported

Unsolicited messaging is supported for client processes

Asynchronous service calls can be made by **client** and **server processes**

Synchronous service calls can be made by **client** and **server processes**

Synchronous calls that receive no return message are supported

Very good security- must connect to...

...Application code can write to the LTLOG with a Tuxedo API (error logging provided) Automatic **process** monitor for **process** that die or machines that get partitioned

Service location independency (distribution/directory services)
Platform independency...can be very costly.

Single threaded servers requires an upfront packaging design.

Difficult to debug **servers**

Does not work well with Pure Software products: Purify, Quantify
Servers must be programmed to...

...one or more resource managers either on a single machine or multiple machines within the **network**. Transaction **Management** Services ensure that all resources for a transaction are updated, or in the case of...

...of a completed transaction are persistent.

Two-Phase Commit is a feature found in distributed **database management** systems and online transaction processing (OLTP) monitors to ensure information integrity across distributed databases. With...

...changing a customer address may require the partitioning and coordination of several physical transactions to **multiple** application systems or databases. Transaction Partitioning Services provide the application with a simple single transaction...

...occur across heterogenous application servers and databases?
EXAMPLE.

In a given application, a single business **process** of updating a customer record requires an update to a table in a UNIX based...of required Execution Architecture components and other application components are available.

Implementation considerations
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In **client/server** applications, it may be necessary to implement Environment Verification Services to ensure that the **client** and **server** applications are of a compatible release level.

33/3,K/17 (Item 17 from file: 349)
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00784124

SYSTEM, METHOD, AND ARTICLE OF MANUFACTURE FOR A REQUEST SORTER IN A TRANSACTION SERVICES PATTERNS ENVIRONMENT
SYSTEME, PROCEDE ET ARTICLE DE FABRICATION APPLIQUES DANS UN TRIEUR DE REQUETES D'UN ENVIRONNEMENT DE STRUCTURES DE SERVICES DE TRANSACTIONS

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2029 Century Park East, Los Angeles, CA 90067-3024, US,
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Application: WO 2000US24082 20000831 (PCT/WO US0024082)
Priority Application: US 99386715 19990831
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VN YU ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
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Detailed Description
Claims

Detailed Description

... request. TP monitors can provide this functionality.

e.g. A system has several servers accepting **requests** from clients dispersed across North America. There are two groups of servers. One group of servers **handles requests** from all clients located in the USA while the other group serves **requests** from Canada. When a client sends a **request** to the system, a field in the **request** message, defining the location of the client, is passed to the system. The TP monitor is then able to route the **request** to the correct group of servers (USA or Canada) based upon information in the **request** message.

Is Reliable Queueing Necessary?

TP monitors provide the ability to enqueue and dequeue **requests** to and from a reliable (stable storage) queue. Both the application and the administrator can control the order of the messages (service **requests**) in the queue. Messages can be ordered LIFO, FIFO, time based, priority, or by some...

...can be forwarded to the home office via a WAN, and the updates can be **replicated** in the home office database. The queuing system can be used to assure that every...transaction monitors.

BEA TUXEDO - provides a robust middleware engine for developing and deploying business-critical **client/server** applications. BEA TUXEDO handles not only distributed transaction processing, but also application and the full...

...functionality of the toolkit to provide a comprehensive environment for developing and deploying distributed transaction **processing**.

Microsofts Transaction **Server** (Viper) - a component-based transaction processing system for developing, deploying, and managing high performance, and...

...of functions including security services, RPC's, a directory service (like a yellow pages for **clients** to find services) and a standard time service, and it is truly cross-platform and...

...although many are on the way). Encina adds primarily a transactional element and some
195

load balancing services to RPC's. It also provides an easier interface to work with (although it...

...very scalable and services can be on any machine in the network. Finally, Encina's **load balancing** is quite good, much better than native DCE or Tuxedo.

Tuxedo

Functionality

Can handle a large number of concurrent client applications

Can **handle** a large volume of through-put (ex. 1000+ TPS)

Scaleable (handle many clients or a...

...delivery using a stable storage queue (/Q)

Future service delivery using /Q (usually for batch **processing**)

Can prioritize messages- most important get processed sooner.

Supports many platforms (all UNIX, NT, all...

...server

Peer-to-peer, client-to-client messaging is supported

Unsolicited messaging is supported for **client** processes

Asynchronous service calls can be made by **client** and **server processes**

Synchronous service calls can be made by **client** and **server processes**

Synchronous calls that receive no return message are supported

Very good security- must connect to...

...that die or machines that get partitioned

Service location independency (distribution/directory services)

Platform independency- **handles** data conversion

Built in data compression (if desired)

Built in performance measurement feature for services...be used to develop highly-available systems (24x7)

Has been implemented with PowerBuilder, VisualBasic, Motif **clients**, and unix batch systems.

Cons of Using Tuxedo

Tuxedo for basic c/s messaging is...

...be understood thoroughly before design starts. If used incorrectly, can be very costly.

Single threaded **servers** requires an upfront packaging design.

Difficult to debug **servers**

Does not work well with Pure Software products: Purify, Quantify

Servers must be programmed to...

...one or more resource managers either on a single machine or multiple machines within the **network**. Transaction **Management Services** ensure that all resources for a transaction are updated, or in the case of...

...of a completed transaction are persistent.

Two-Phase Commit is a feature found in distributed **database management** systems and online transaction processing (OLTP) monitors to ensure information integrity across distributed databases. With...

...Services provide support for mapping a single logical transaction in an application into the required **multiple** physical transactions. For example, in a package or legacy rich environment, the single logical transaction...database engine/server, it needs to know, during startup, various information like - database name, the **server** name, login ID, etc. - Instead of hard coding all these information in the application executable...

...can be stored in the profile file for flexibility. In the future, if the database **server** name should change, this change only needs to be entered in the applications profile file...

...of required Execution Architecture components and other application components are available.

Implementation considerations

204

In **client/server** applications, it may be necessary to implement Environment Verification Services to ensure that the **client** and **server** applications are of a compatible release level.

Claim

Method for **sorting requests** that are being unbatched from

a batched message, comprising the steps of

- (a) providing a group of business objects necessary for a transaction;
- (b) grouping logically-related **requests** received from the business objects;
- (c) obtaining at least one of sorting rules and sort weights;
- (d) **sorting** the **requests** in the message and placing them in a specific order determined from the one of the sorting rules and the sort weights;
- (e) **batching** the **sorted requests** into a single message;
- (f) sending the message to a data server; and
- (g) unbundling the **requests** from the message in the specific order.

2 A method as recited in claim 1, wherein a **request** is not allowed to proceed until all dependent **requests** are completed.

3 A method as recited in claim 1, further comprising the step of determining the class represented by each **request**, wherein the **sorting** rules are based on a class type.

4 A method as recited in claim 1...

...as recited in claim 5, further comprising the step of creating a linear ordering of **requests** based on the referential integrity rules, wherein the numbering of the position of the **request** in the linear ordering is the weight of that **request**, wherein **requests** with lower weights are processed before **requests** with higher weights.

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. A computer program embodied on a computer readable medium for **sorting requests** that

are being unbatched from a batched message, comprising:

(a) a code segment that provides...

...of business objects necessary for a transaction; (b) a code segment that groups logically-related **requests** received from the business objects; (c) a code segment that obtains at least one of sorting rules and sort weights; (d) a code segment that **sorts** the **requests** in the message and places them in a specific order determined from the one of the sorting rules and the sort weights; (e) a code segment that **batching** the **sorted requests** into a single message; (f) a code segment that sends the message to a data server; (g) a code segment that unbundles the **requests** from the message in the specific order.

8 A computer program as recited in claim 7, wherein a **request** is not allowed to proceed until all dependent **requests** are completed.

9 A computer program as recited in claim 7, further comprising a code segment that determines the class represented by each **request**, wherein the **sorting** rules are based on a class type.

10 A computer program as recited in claim...

...in claim 11, further comprising a code segment that creates a linear ordering of **requests** based on the referential integrity rules, wherein the numbering of the position of the **request** in the linear ordering is the weight of that **request**, wherein **requests** with lower weights are processed before **requests** with higher weights.

13 A system for **sorting requests** that are being unbatched from a batched message, comprising:

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(a) logic that provides a group of business objects necessary for a transaction; (b) logic that groups logically-related **requests** received from the business objects; (c) logic that obtains at least one of sorting rules and sort weights; (d) logic that **sorts** the **requests** in the message and places them in a specific order determined from the one of the sorting rules and the sort weights; (e) logic that **batching** the **sorted requests** into a single message; (f) logic that sends the message to a data server; (g) logic that unbundles the **requests** from the message in the

specific order.

14 A system as recited in claim 13, wherein a **request** is not allowed to proceed until all dependent **requests** are completed.

15 A system as recited in claim 13, further comprising logic that determines the class represented by each **request**, wherein the **sorting** rules are based on a class type.

16 A system as recited in claim 13...

...system as recited in claim 17, further comprising logic that creates a linear ordering of **requests** based on the referential integrity rules, wherein the numbering of the position of the **request** in the linear ordering is the weight of that **request**, wherein **requests** with lower weights are processed before **requests** with higher weights.

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00784119

A SYSTEM, METHOD AND ARTICLE OF MANUFACTURE FOR A REFRESHABLE PROXY POOL IN
A COMMUNICATION ENVIRONMENT
SYSTEME, PROCEDE ET ARTICLE POUR GROUPE D'ELEMENTS MANDATAIRES (PROXY)
RAFAICHISSABLES DANS UN ENVIRONNEMENT A CONFIGURATIONS DE SERVICES DE
COMMUNICATION

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LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL

TJ TM TR TT TZ UA UG UZ VN YU ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

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Claims

Claim

... consumer-to-business

transactions. To do this, the Web must
@volve into a full-blown **client/server** medium that can
ran your line-of-business applications (i.e., a delivery vehicle for...

...using object technology. For the same reason (i.e., standard
interfaces), it is possible to **request** a component's services from
any platform. That's not true of objects, unless they...to count,
reserve, and value anything it is associated with. Inventory could be
used to **manage** a variety of things: conference rooms, fixed assets,
work in process, finished goods, and leased...

...technology must be justified in business rather than technology terms.
In many cases, a traditional **client/server** solution can
deliver the benefits. This proves especially true for short-lived,
simple, or moderately...knowledge workers needing flexible navigation.
Reduces system test complexity and cost
In a few different **instances**, the object-oriented development
approach has significantly reduced system test complexity. In all these
cases the projects fell behind **schedule** due to learning curve, the
complexity of custom architecture development, and increased effort for
component...

...functionality and performance was much easier. For example, since less
code and data knowledge was **replicated** throughout the system,
global changes could often be made by making a change in one...core
business components that represent the business directly in software.
These components perform behaviors upon **request** by windows,
reports, or batch process control objects. The presence of a component
model distinguishes component-based systems from procedural, **client**
/server systems. In a procedural approach, there is no shared
business component model. 3o This typically...

...database vendor.

Architecture development must start early

A tension exists between scenarios and frameworks

As with **client/server**, architecture work must start early. As
noted above, this is particularly challenging because of the...or
application framework is a unique skill set distinct from purely
technical or functional skills.

Managing the domain component model requires new organization
approaches

In addition, the extensive reuse of a core business component model
requires an organization structure that **manages** it as a shared
resource. This creates a tension between the needs to support consistent
...

...more. It is also extremely important to have a significant percentage of
the team with **client/server** skills, to reduce additional
learning curves such as GUI design or **client/server**
architecture development.

Estimating and planning present new **management** challenges

Projects should allow time for start-up costs and contingencies

There is still not enough...by increasing scope and team size. The
urgency of the business and the desire to **manage** development size
may sometimes favor an incremental approach.

Commercially available methodologies have a narrow focus...

...component-based system and the variety of technologies associated with

it complicate testing and configuration **management**. A componentbased system may often have more than ten times as many components as a...

...generally demand even more and deeper skills, unless the team has exceptionally talented individuals, extensive **client/server** experience, and ample time to scale the learning curve. It is important to note that...common to those who have successfully scaled the component management learning curve include:

Experience with **client/server** development and a technical orientation

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Willingness and flexibility to learn new terminology, tools, and...

...giving people appropriate mentoring and support. Many technology architects are simply not well equipped to **handle** the tutoring, coaching, and communications demands inherent in component-based development. Avoid starting inexperienced people...

...roles. While the dual role of building and supporting an architecture exists in a traditional **client/server** system, it may be more pronounced with component technology. Component-based systems require a higher...the training needs during nonnal work hours for the system to meet a reasonable

299

schedule. Thus, at times, individuals ...people must integrate smoothly. This complicates increasing the team size. If a project slips off- **schedule**, caution should be exercised in adding people.

Brook's

fundamental law states:

Adding more people...The need to start architecture implementation early is well-understood for traditional or component-based **client/server** development. What is different with component-based development, however, is the need for the component...specifications.

Architecture development must start early

A tension exists between use cases andframeworks

As with **client/server**, architecture work must start early. As noted above, this is particularly challenging because of the...of window functionality, development can proceed very similar to that of a I 0 traditional, **client/ server** GUI project. Particularly early in development, many aspects of the methodology can be very similar...

...based development and more related to challenges naturally resulting from unfamiliarity. What is now "traditional" **client/server** development faced similar difficulties years ago. In some cases, this unknown requires experimentation. For example...

...whether to use messaging, remote procedure calls, or shipped SQL

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00761431

A SYSTEM, METHOD, AND ARTICLE OF MANUFACTURE FOR PROVIDING COMMERCE-RELATED

WEB APPLICATION SERVICES
SYSTEME, PROCEDE ET ARTICLE MANUFACTURE DESTINES A LA FOURNITURE DE
SERVICES D'APPLICATION DANS LE WEB LIES AU COMMERCE

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Minneapolis, MN 55402-0903, US,

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CA CH CN CR CU CZ CZ (utility model) DE DE (utility model) DK DK (utility
model) DM DZ EE EE (utility model) ES FI FI (utility model) GB GD GE GH
GM HR HU ID IL IN IS JP KE KG KP KR KR (utility model) KZ LC LK LR LS LT
LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SK
(utility model) SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
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Detailed Description

Claims

Detailed Description

... an object and a class of objects at this point. An object is a single
instance of the class of objects, which is oftenjust called a
class. A class of objects...execute within a Java-compatible browser
(e.g., Netscape Navigator) by copying code from the **server** to
client. From a language standpoint, Java's core feature set is
based on C++.

Sun's...

...in the analysis, design, construction, and maintenance of business
systems, as well as the associated **management** processes. The ...0
Remigration to system test of a cycle, because the impact analysis for a
change **request** was incomplete

* **Requesting** support from another team (for example, environment
support,
information management) and waiting unnecessarily for a...

...functions are defined as.

The Information Management team 202

The Quality team 204

The Environment **Management** team 206

- * The Release **Management** team 208
- The Configuration **Management** team 210
- The Problem **Management** team 212
- The Program and Project Management teams 214
- The Security Management team 216

Together...an Internet-based online banking system are far greater than those of a fully isolated **client/server** system, and therefore warrant a larger team with broader responsibilities and greater influence.

More details...

...The following are not included.

- " Performance of daily backups - this is handled by the Environment **Management** team
- 0 **Database** administration - this is part of the Architecture team responsibilities
- " Performance tuning of the information repositories...

...of deliverables. As such, it is responsible for.

- Planning and control of delivery
- Milestones and **schedule**
- Resource consumption
- Risk and quality (at deliverable level)
- Configuration Management
- The Configuration Management team is...will implement the IDEA framework.

The Technology Infrastructure team is responsible for.

- Data design and **management**
- Database** administration
- Database** tuning
- Execution architecture design and construction
- Development architecture design and construction
- Operations architecture design and...very useful. Other samples may include logs, which demonstrate interaction with tools, a sample change **request**, or a sample **request** for technical support. Samples can sometimes be created efficiently by taking screen dumps.

This can...50

- Monitoring and controlling update activities in the repository
- Receiving and validating data element change **requests**
- Creating and modifying data elements
- Enforcing project standards regarding repository objects
- 0 Validating the contents...

...at the end of each day. Increased control can be obtained by having designers submit **requests** for new data elements to the repository administrator. This allows the repository manager to evaluate...

...whether an existing one should be used.

- Repository Maintenance
 - a) Creating and maintaining data elements
- Requests** for data element changes can be forwarded using a database or paperbased system. Based on functional and technical knowledge, the

repository administrator evaluates the **requests** and may involve other teams to make appropriate decisions.

The database used to **request** data element changes during design and programming should be separate from the project's change **request** database. This will simplify and speed up the change process. When data elements have to...

...changed during system test, however, the impact can be much greater, and the regular change **request** database should be used.

Whenever a data element is changed, impact analysis must be performed...0

Define the opportunity selection process

0 Identify the resource allocation process

0 Define the **scheduling** process

0 Identify how the effort will be monitored

0 Identify the procedure for communicating...

...support the process

0 Prioritize and classify opportunities

0 Select projects

0 Allocate resources and **scheduling**

0 Monitor effort

0 Support a standard process improvement process across the project

While maintaining...Standards and Procedures

The Capability Maturity Model (CMM) for Software describes the software engineering and **management** practices that characterize organizations as they mature their processes for developing and maintaining software.

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...Management focuses on providing specific deliverables through balanced management of scope, quality, effort, risk, and **schedule**. Project Management processes follow a cycle of planning the project's execution, 'organizing its resources...a package.

b) Version Control (1 14)

Version control and compatibility are key considerations when **managing** these packages. Note that version control not only applies to software components, but also to...

...packages or consistent configurations from one stage to another is a central part of Configuration **Management**. The key to successful migration is the knowledge of what constitutes each stage. Examples of...

...the package is eventually released to the production environment.

d) Change control (1 18)

Change **requests** as a consequence of changing requirements and changes **requested** due to nonconformities (or defects), either in the application software, or in the system software must be analyzed, authorized, **scheduled**, staffed, and tracked in a defined way.

What, why, when, and who made a change...

...is remigrated to a given development stage.

It is important to link the general change **request** with the

requests produced during formal testing phases. This makes the processes clearer.

Configuration Management becomes more complex...It should specify the following.

The responsibility of the Environment Management team
How developers should **request** technical support
How quickly a **request** for support will be serviced
How the Environment Management team will notify developers of environment...

...The SLA should also specify how to measure this service (for example, system response times, **request** service times, backup frequencies).

In addition, the SLA must be

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managed. It may have group and the developers. The Help Desk makes sure that questions are answered and **requests** serviced in a timely manner by the right people. In a complex, leading-edge environment...

...software are introduced, and compatibility issues arise. Part of the coordination is the tracking of **request** IDs, which refer to the same question but which are assigned differently by each supplier...

...Production Control

In the development environment, a number of activities must be performed according to **schedule**, including.

Reorganization of databases, including the repository
Rerunning of database statistics
Performing backups
Transportation of...

...file transfers between environments/sites

Preventive maintenance of equipment

Many of these activities can be **scheduled** and performed automatically, but must have some level of manual control to ensure that they...

...that outside suppliers are strongly motivated to abide by the agreement.

Service Plannin (124)

Service **Management**

Systems **Management**

Managing Change

MODE divides Service Planning into.

Service Management Planning

Systems Management Planning

Managing Change Planning...resources and training to ensure that they are equipped to deliver service as agreed.

Systems **Management** Planning

Daily tasks must be specified, assigned, and followed up. Systems management planning determines who...

...Controlling Change, Testing Change, and Implementing Change.

Controlling Change

1 5 After planning for and **scheduling** change, it must be controlled. This ties in closely with Configuration Management.

Testing Change

Thorough...

...the risk of productivity loss due to environment changes. Techniques commonly used include.

0 Careful **scheduling** of events to minimize disruptions (typically weekends and evenings are used to enable a strictly...design may occur after system test starts, as in the case of an urgent change **request**, or when a significant inconsistency is detected in system test. Some reverse engineering work may...

...sense, usability is the thoughtful, deliberate design approach that considers users throughout the solutions-building **process**, from start to finish. For this reason, usability guidelines should be defined and followed at...Procedures

System test relies heavily on configuration management, repository management, and quality management.

0 Configuration **management** provides the basis for promoting a configuration from the construction environment to the system test...

...test environment)

Run test cycle

Compare expected results and actual results

0 Log System Investigation **Requests** (SIRs)

4' Analyze deviations and identify components requiring change (either expected results, test-data, or system components)

Define Change **Requests** (CRs) and perform impact analysis

Package those change **requests** that affect the same areas and that naturally

belong together, into change packages

Schedule and staff the changes

Unlock components for change

81

Perform changes and refine impact analysis...properly.

Assembly test ensures that data is passed correctly between screens in a conversation or **batch** process and that messages are passed correctly between a **client** and a **server**. The specification tested is the technical design. The application flow diagram within the technical design...

...test, release test, or the conversion test. The operational readiness test becomes especially key in **client/server** environments. It has four parts.

* Roll out test - ensures that the roll out procedures and...

...tools 204 support all quality management processes

Program and Project Management tools 214 assist the **management** teams in their daily work

" Environment Management tools 206 provide the facilities to maintain the development environment

" Release Management tools 218 manages the simultaneous development of multiple releases

" Configuration **Management** tools 210 cover the version control, migration control and change control of system components such...tools.

Specifically, productivity tools include.

33/3,K/20 (Item 20 from file: 349)
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00488451 **Image available**
INTEGRATED CUSTOMER INTERFACE FOR WEB BASED COMMUNICATIONS NETWORK
MANAGEMENT
INTERFACE CLIENT INTEGREE POUR LA GESTION DE RESEAUX DE COMMUNICATIONS
BASES SUR LE WEB

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... by selecting the
"Remove All" button 2461f.

As an example, a "List Tickets by Status **Request**" transaction will provide all the tickets for a given organization (ORG) code with the **requested** status and created after a specified date. The ORG code to be passed in this...
...for future processing.

Generally, only one type of status may be specified in

a single **request**: Open, Closed, Referred or Cancelled status. If a customer has authority over more than one...

...organization, then

he/she has implied access to all the subordinate organizations meaning that the **request** will apply to the subordinate organizations as well, Furthermore, this transaction may only display some...

...RULE 26)

details/fields of the tickets which means that the data cached from this **request** may only be used to process the Queries on tickets. It cannot be used to...menu bar or double click the ticket in the query results.

Particularly, a "Display Ticket **Request** Transaction" (CSM/SI transaction) may be used to obtain the details, activities and remarks of a ticket. This transaction allows several display **requests** to be made, e.g., by setting corresponding flags to 'Y', Whenever the customer wishes to view details, remarks or activities of a particular ticket, this **request** will be made with all the three flags set and the ticket number stuck SUBSTITUTE...

...the "Find" button 2453 from the tool bar

2450, the CSM/SI Transaction, "Display Ticket **Request** Transaction" is invoked, where the ticket number is passed on the **request** for handling as described above.

It should be understood that, in the preferred embodiment, a "Change Ticket **Request** Transaction" may be implemented allowing the customer to change some of the fields of a...allows the customer to add remarks to that Ticket.

Thus, by implementing an "Add Remarks **Request** Transaction," the customer may add remarks on a ticket that is in an open status...appropriate questions. Once all the required information is available, the system performs an "Open Ticket **Request** Transaction" and passes all of the data fields. The CSM legacy system then attempts to...

...the

ticket number is displayed to the customer.

As an example, to create a service **request** from scratch, the customer may select, for example, the "Create" button 2451 from the tool...

...up front and stored in the User Profile. This is done using an "Enter Activity **Request** Transaction" which allows the customer to enter different activities like 'Refer Out', 'Close', 'Refer Back...

...the SI application allows the customer to close the ticket by using an "Enter Activity **Request** Transaction" described with respect to ticket creation.

When a customer wishes to close a ticket...the ticket back to the enterprise (MCI).

This is also accomplished using the Enter Activity **Request** Transaction. Again, the system will make this transaction and pass the activity code for 'Refer...

...Figure 25(m), the TroubleTicket 2610 is the root of the Service Inquiry DOM. TroubleTicket **instances** contain identifying information that is used by the presentation layer to sort and filter a collection of TroubleTickets. The TroubleTicket class is responsible for accepting **requests** from the presentation layer, forwarding the **requests** to the backend and returning results to the presentation layer. In addition to maintaining identifying...

...Remarks, Details and Activities in CSM. Remarks and Details are also represented by vectors of **instances** of a "RegistryEntry" class. Activities are represented by a vector of **instances** of the Activity class 2660 which is an information holder having **instance** variables containing information that corresponds to fields in the CSM/SI Activity Record. The RegistryEntry class is a class in the ServiceInquiry DOM comprising **instances** 2640a that are used by Question **instances** 2630 and **instances** 2640b,c used by Registry **instances** 2650. When used by a Question, RegistryEntry **instances** 2640 represent the possible choices for answers to the Question. Once the user selects a RegistryEntry "choice," this RegistryEntry **instance** becomes the answer to the question. When used by a Registry, the RegistryEntry **instances** 2640b,c represent remark or detail information respectively, that is retrieved from CSM/SI. Specifically, RegistryEntry 2640a,b,c comprise the following **instance** variables: 1) a Text **instance** variable which is an optional variable used to specify SUBSTITUTE SHEET (RULE 26) text that...

...a Question if the value is different than that specified by the registryValue; 2) registryKey **instance** variable which maps to a key in CSM/SI; 3) a registryValue **instance** variable which maps to the value in CSM/SI specified by the key in registryKey; 4) a nextGroupID **instance** variable which is an optional field used by the Question to assist the QuestionTree in some navigational tasks; and 5) a question **instance** variable which is a reference to the Question **instance** to which this RegistryEntry belongs. A RegistryEntry is contained by its Question; this **instance** variable is a back-pointer.

The Registry Classes, i.e., classes that represent CSM/SI...

...field record
format; Service Inquiry requires Remark, Detail and Activity information in Java object format (**instances** of RegistryEntry or Activity). To provide these two formats, the Registry Classes contain behavior to convert **instances** to fixed-length field record format and to instantiate themselves from fixed-length field record...

...to which it
belongs. A Question has a vector of RegistryEntry SUBSTITUTE SHEET (RULE 26) **instances** 2640a called choices. When the user "answers" the Question, the answer is set to the...

...the
user. As a Registry Entry may contain a nextGroupID, the nextGroupID of the RegistryEntry **instance** selected as an answer to a decision point Question is used to derive the next...excluded from the group.

TFNM

As mentioned above, another application of the suite of telecommunications **network management** applications is the toll free **network management** tool SUBSTITUTE SHEET (RULE 26) as shown in Figure 26. Referred to herein as "TFNM," the toll free **network management** tool 200 provides the client GUI and middle-tier service that enable customers to **request**, specify, receive and view data pertaining to their toll free **network management** assets, e.g., toll free number routing plans, and to generate orders for changing aspects...referred to as "CORMI" (Common Objects RMI) which provides an RMI-like interface between the **client** and the **server** using the networkMCI Interact protocol. The CORMI procedures implemented have additional controls built in to...

...communication over the firewalls.

More specifically, CORMI is nMCI Interact's protocol for providing secure, **client-to-server** communication with Java RMI-like semantics and comprises a library of Java classes used by both the **client** applet and **server** application. In view of Figure 26, the communication path from the **client** and the **server** is as follows.

The TFNM server application 840 registers remote objects with CORMI's CORemoteSessionServer...

...robin protocol to
select a TFNM server and then opens an HTTPS connection to an **instance** of the TFNM server application. on this server, the CORemoteSessionServer creates a new session for...invocations are handled by CORMI as

COSynchTransactions through the dispatcher to the same TFNM server **instance** that the logon and interface lookup took place at.

It should be understood that there is no permanent connection between the TFNM **client** and **server**; CORMI, through a COSynchTransaction, creates a new HTTPS connection to the dispatcher (and the dispatcher...

...with the nMCI Interact home page (Figure 5(a)) whereby the user may select the **Network Manager** icon 89 to enter into the TFNM system. Upon selection of the **Network Manager** icon, a client TFNM application is downloaded to the customer who is presented with the...

...accordance with that user's privileges. To determine privileges, TFNM user security profile information is **requested** from StarOE that comprises a list of Corp Ids and AccessId combinations, referred to herein NetCap 290 **requesting** a user security profile. Particularly, the messaging system implemented for all communications between the TFNM...

...provided in the TFNM database, or, if the information in TFNM is not current. For **instance**, for some messages, a data sync may always be invoked. Thus, TFNM may contact NetCap...

...Registry messaging to NetCap. The SUBSTITUTE SHEET (RULE 26) Registry message call "NPSNC" is the **request** to sync a plan and is transmitted from the TFNM server to NetCap.

There are a variety of Registry response messages for this **request**.

As shown in Figure 27(d), the File/Select Corp ID menu option causes a...

Claim

1 An integrated system for providing a plurality of communications **network management** services and products to a customer over the public internet, said **network management** services and products accessible from a client workstation employing a client browser associated with said...

...integrated within said web based GUI and enabling interactive communications with one or more communications **network management** resources provided by said communications service enterprise via a secure web server; and, SUBSTITUTE SHEET (RULE 26)
(c) each said secure web server supporting

communication of **request** messages entered by said customer via said customer interface to said one or more **network management** resources capable of providing a desired communications **network management** function; wherein said one or more remote application resource processes said **request** messages and provides responses to said one or more secure web servers for secure uploading...

...said client browser and display via said integrated customer interface, thereby enabling a customer to **manage** its communications **network** assets.

2 The integrated system as claimed in claim 1.
wherein said one or more...

...claimed in claim 2,
wherein said system includes digital certificates to authenticate a secure web **server** to said **client** web browser.

5 The integrated system as claimed in Claim 2,
wherein said downloaded web...

...interoperate with one another to provide said integrated customer interface to a plurality of communications **network management** products and services
SUBSTITUTE SHEET (RULE 26)
subscribed by the customer.

6 The integrated system as claimed in claim 5,
wherein a **network management** resource comprises a server for providing a customer authentication function and for downloading a logon...

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00484627

INTEGRATED BUSINESS SYSTEM FOR WEB BASED TELECOMMUNICATIONS MANAGEMENT
SYSTEME D'ECHANGES COMMERCIAUX INTEGRES POUR LA GESTION DE
TELECOMMUNICATIONS SUR LE WEB

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... can be performed on the data displayed in a spreadsheet including such dynamic operations as **sorting** of report data, sub-totaling of report data, etc.. Furthermore, the report viewer 215 is...

...a geographic view as one of the graph/chart types.

An overview of the report **request/scheduling** process 600 implemented by StarWRS Report Manager and Report **Requestor** tools will now be described.

After preliminary logon, authentication and verification of StarWRS web based report **requestor** web page.

Figure 12(a) illustrates an exemplar dialog box 1550 provided on the report **requestor** web page that is presented to the user after the logon and authentication process. From...user report selections, if a report had already been created and maintained in the report **manager database**, it will be displayed in the report inventory field 1568 of Figure 1 (a) Referring...

...report title, by selecting field 571a, report description, by selecting field 1571b, and the report **schedule**, by selecting field 1571c. For the example selection of report title customization shown in Figure...the right hand field 1580 with the existing report values.

. When selecting the report **schedule** 1571c, the user is presented with a screen 1597, as shown in Figure (c). The...

...field 1580 includes: selection of time zone, by menu choice 1582; selection of the report **schedule** radio buttons 1583 to specify the report as recurring, daily, weekly, monthly, or hourly entry...that user's email address.

As mentioned above with respect to Figure 10, the Report **Requestor** client application 212 gains access to the metadata stored at the Report Manager server 250 through messaging. Particularly, as hereinafter described, a message generated by the Report **Requestor** in accordance with the user request is first received by the report manager proxy...

- ...a parser object tool is employed to decompose the Metadata messages sent by the report **requestor** 212 to validate the message. If errors are found in the Metadata input, the RM...
- ...an error message to the requesting client. If the Metadata passes the validation tests, the **request type** is then determined and the appropriate service will be invoked after which a standard response is sent back to the **requesting** client.

The Report Manager 250 implements stored procedures to translate the message, perform the **request**, and send the information back to the Report **Requestor** 212 which uses the metadata to determine what a standard report should look like, the...

- ...standard template reports is based on the user's entitlements.

The following types of metadata **requests** and responses that may be generated by the StarWRS Report **Requestor** 212 and Report Manager 250 components include: 1) Get/Send report template list (GRTL/SRTL) which **request** enables retrieval of the list of all standard report templates for all products and is...

- ...e.g., report title, description, etc.; 2) Get/Send report template detail (GRTD/SRTD) - which **request** retrieves the details of a specific standard report template; 3) Get/Send user report list (GURL/SURL) - which **request** retrieves the list of all user reports for the report format selected from a user report table and is used only as a **request** for general report information, e.g., report title, status, etc.; 4) Get/Send user report detail (GURD/SURD) - which **request** retrieves the details of a specific user's report; 5) Add report definition/Acknowledgment (ARD/ARDA) - which **requests** addition of a user-created report to a user report table. If the report is a scheduled report, it is **request** is also communicated to the fulfilling server at the time the report is due...

- ...user-created report from the user table; 7) Copy report definition/Acknowledgment (CRD/CRDA) which **request** creates a duplication of the report the user is editing (other than the report title) and creates a new report ID for it; 8) Update Reporting Schedule/Acknowledgment (URD/URDA) - which **request** updates the **scheduling** information on a report without

having to send a Delete and Add request; and, 9) Get Pick List/Acknowledgment (GPL)- which request enables the Report **Requestor** 212 to get a pick list provided by StarOE server.

Having described the functionality of...

...client has sent a valid message, the appropriate member function is invoked to service the **request**. The response is built inside the esgl wrapper function after obtaining the necessary information through the stored procedure from the RM **database**. The Re@ort **Manager** creates the RMServerSocket ob@ect and sends the ARDA message back to the client. Wrien...

Claim

... said customer's entitlements have been verified;
(d) said plurality of system resources including a **network manager** which **manages** the routing of the customer's traffic over the communications network, and a view application to review said **network** traffic, said **network manager** and said view application responsive to proxy **requests** from said dispatch server to enable the customer to command and control the communications network...

...in Claim 1, wherein said switched communications connections further includes switched voice traffic and said **network manager** may command and control said switched voice traffic.

3 The integrated and secure system for...

...2, wherein said switched voice traffic further includes switched toll free voice traffic and said **network manager** includes a toll free **network manager** application to command and control the routing of said switched voice traffic.

4 The integrated...

...said switched voice
83
traffic further includes switched call cen@er voice traffic and said **network manager** includes a call manager application to command and control the routing of said switched voice...

...for
conducting business over-the public Internet as claimed in Claim 2, wherein said **network manager** includes an outbound **network manager** to command and control said switched toll traffic.

6 The integrated and secure system for...

...1, wherein said switched communications connections further includes switched voice and data communications and said **network manager** may command and control said switched voice communications.

7 The integrated and secure system for...to separate communications network services provided to the customer by the enterprise;

(d) a report **requestor** for enabling the customer to **request** reports from said plurality of system resources provided by the enterprise to the customer, a...

...the customer, and a report viewer for presenting the reports to the customer, said report **requestor**, said customer in-box and said report viewer responsive to proxy **requests** from said dispatch server to enable the customer to obtain and view reports from data...

...for conducting business over the public Internet as claimed in Claim 16, wherein said report **requestor** provides a single tool set for **requesting** and **scheduling** reports across a plurality of system resources.

18 The integrated and secure system for conducting...the customer, said event monitor application providing said customer with data necessary to make informed **network management** decisions with respect to said plurality of system resources from a single point of customer...

...Internet as claimed in Claim 22, wherein said event monitor includes a report manager for **requesting** and **scheduling** reports on events occurring within the customers switched communication connections.

24 The integrated and secure...

...Internet as claimed in Claim 22, wherein said event monitor includes a report manager for **requesting** and **scheduling** reports on events occurring within the customers switched data communication connections.

25 The integrated and...

...public Internet as claimed in Claim 22, wherein said system further includes a toll free **network manager** as one of said plurality of system resources, and said manager provides reports on the...

...public Internet as claimed in Claim 22, wherein said system further includes an out bound **network manager** as one of said plurality of system resources, and said outbound **network manager** providing reports on the customers outbound network calls.

29 The integrated and secure system for...

...28, wherein said system further includes a single order entry application and an out bound **network manager** as two of said plurality of system resources, wherein said order entry application enables a...

...to modify said entitlements from a single point of customer identification and authentication, said outbound **network manager** providing modification of individual users entitlements for outbound network calls in response to entitlements determined...a single point of customer identification and authentication, said order entry application responsive to proxy **requests** from said dispatch server to enable the customer to **manage** the communications **network** services provided by the enterprise to the customer.

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00443927

A COMMUNICATION SYSTEM ARCHITECTURE
ARCHITECTURE D'UN SYSTEME DE COMMUNICATION

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Detailed Description

... The packet classifier 2050 hands off priority tagged and non-tagged packets to the packet **scheduler** 2060 via the process to process interface (90). The process to process interface 2090 need...

...process to process interface 2085, but the same selection of techniques is available.

The packet **scheduler** 2060 used a priority queuing technique such as Weighted Fair Queueing to help ensure that...placed on an outbound network interface queue ahead of competing best-effort traffic.

The packet **scheduler** 2060 hands off packets in prioritized order to any outbound network interface (2010, 20702 2071...
...existing communication network systems has its own way of providing service management, resource management, data **management**, security, **distributed** processing, **network** control, or operations support.

The architecture of the ISP 2100 defines a single cohesive architectural is able to tailor the service offerings to their own needs.

Customer **managed**: customer has direct (**network**-side) access for the administration and control of their service.

Loosely Coupled: services obtain and...

...the ISP's role.

e Revenue Management 2112 - responsible for financial aspects of customer services.

* **Network Management** 2114 - responsible for the development and operation of the physical **networks** 2102,
9 **Product Management** 2116 - responsible for the creation and marketing of customer services.

The entities external to the...and updated through the Marketable Service Gateway 2128. This is actually no different than the **Management** Service Gateway 2130, except that the services created and deployed through here are for external...

...services include collection and filtering of alarm information from the ISP 2100 before forwarding to **network management** 2132,
e Service Engines 2134 - A Service Logic Execution Environment for either marketable or management...

...a service engine 2134, designed specifically to choose a service or services to execute.

***Resource Managers** 2 150 - **manages** all resources, including specialized resources 2152 and service **instances** running on service engines 2134, and any other kind of resource in the ISP 2...resources and lower-level functional capabilities which may be used in Service delivery, monitoring, or **management**.

Do ISP Integrated **Network** Services
Figure 22 shows how the ISP architecture 2100 supplies services via different networks. The...

...the same way. Calls (or transactions) will originate in a network from a customer service **request**, the ISP will receive the transaction and provide service by first identifying the customer and...

...component of the ISP. Each of these entities is expected to be deployed in multiple **instances** at multiple sites.

El ISP Components
Ext App 2176- an external application;
App 2178- an...

...execute the desired service logic; and
Service Select 2194- the function which selects the service **instance** (running on a service engine 2134) which should process transactions offered from the networks.

PI...by each capability operation is defined by the capability operation support data parameters and user **instance** data parameters.

9. Capabilities are deployed into the network independent of any service.

10. Capabilities...Most Available, First Encountered,

Use Until Failure and Exclusive Use Until Failure.

5. The Resource **Management** Model 2150 should optimize the allocation of resources and, if possible, honoring a selected policy...

...Management Model 2150 must allow for the enforcement of resource utilization policies such as resource **time out** is and preemptive reallocation by priority.

8. The Resource Management Model 2150 must be able...

...enter a pool, and de-register to leave a pool.

ii. The only way to **request**, acquire and release a resource 2152 is through the RM 2150.

12. The relationship between resources should not be fixed, rather individual **instances** of a given resource should be allocated from a registered pool in response to need...logic and other meta-data controls provide a flexible means to apply policy.

14. Data **Replication** provides reliability through duplication of data sources.

15. Database Partitioning provides scalability by decreasing the...OS standards will be gained through Mediation Layers.

8 . Operational Functions - Operational personnel handle the **Network** Layer &, Element **Management** for physical &, logical resources.

9 . Administration Functions - Administration personnel handle the Planning &, Service Management.

10...

...are managed by administration personnel under the domain of the Data Management system.

11. Telecommunication **Management Network** (TMN) compliance - TMN compliance will be achieved through a gateway to any TMN system.

12...in a sense of an object-oriented object as described earlier in the specification. An **instance** of a service 2200 contains other objects, called service features 2202. A service feature 2202...capabilities to be shared. Also, Management and Marketable Services represent two viewpoints of the same **network: Management** Services represent and operational view of the network, and Marketable Services represent an external end...

...order the service, a

billing mechanism, some operational support capabilities, and service monitoring capabilities. The **Management Services** provide processes and supporting capabilities for the maintenance of the platform.

b) Service Features...

...has internal, private state data, and a well-defined interface for creating, deleting, and using **instances** of the capability. Invoking a capability 2204 is done by invoking one of its interface...in User Profiles, which is defined by customers or their representatives when the service is **requested** (i.e. at creation time).

5. Service 2200 Execution

Services 2200 execute in Service Logic...

...service select function 2148 (Figure 21) uses the Resource Manager 2150 function to find an **instance** of the executing service 2200 to invoke. The initiating action is delivered to the service 2200 **instance**, and the service logic (from the service template) determines subsequent actions by invoking additional service...Purpose The objectives of this architecture are to.

Create a common ISP functional model for **managing** data;
Separate data from applications;
Establish patterns for the design of data systems;
Provide rules...

...stored at many locations simultaneously, but a particular piece of data and all of its **replicated** copies are viewed logically as a single item. A key difference in this embodiment is...is stored at many locations simultaneously. A particular piece of data and all of its **replicated** copies are viewed logically as a single item. Any of these copies may be partitioned...
...The architecture is that of distributed databases and distributed data access with the following functionality.

Replication and Synchronization;
Partitioning of Data Files;
Concurrency Controls;
@Transactional Capability; and
* Shared common Schemas.

Claim

... system of claim 5 wherein the plurality of functions includes the employment of a packet **scheduler**.

19 The communications system of claim 18 wherein the packet **scheduler** is configured to place packets on a priority queue according to packet classification and service...

...controller

function can accept or reject control commands based upon the privileges granted to the **requesting** entity.

27 A computer program embodied on a computer-readable medium for prioritizing and routing...

...a single connection;
a gateway which couples the packet transmission network with the switched communications **network**;
a call queue **manager** coupled to the packet transmission network;
an Automated Call Distributor (ACD) coupled to the switched...a single connection;
a gateway which couples the packet transmission network with the switched communications **network**;
a call queue **manager** coupled to the packet transmission network;
an Automated Call Distributor (ACD) coupled to the switched...claim 78 wherein the information includes the time and date that the callback session is **scheduled** to occur.
100. The hybrid telecommunication system of claim 78 wherein the callback session initiates...

...and called number.
is
102. The method of claim 85 further including the step of **scheduling** the callback session at the time and date specified in the information. 103.
The method...

...the calling parties.
104. The computer program of claim 92 further including fourth software that **schedules** the callback session at the time and date specified in the information.
105. The computer...

33/3,K/23 (Item 23 from file: 349)
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A COMMUNICATION SYSTEM ARCHITECTURE
SYSTEME, PROCEDE ET PRODUIT MANUFACTURE POUR L'ARCHITECTURE D'UN SYSTEME DE COMMUNICATION

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Detailed Description
Claims

Detailed Description

... to process this call.

The agents process the calls received by communicating with the NIDS (**Network Information Distributed Services**) Server which are the Validation or the Database Servers with the requisite databases for ...

...service and performs an 800 Number Translation from a reference table in the switch or **requests** the Data Access Point (DAP) 3 to provide number translation services utilizing a database lookup the database servers with a set of database lookup **requests**. The database lookup **requests** include queries on the type of the call, call validation based on the telephone numbers...

...the Called Party. The Agent informs the called party about the Calling Party and the **request** for a Collect Call. The Agent gathers the response from the Called Party and further...

...of intelligent processors with specialized software, special purpose bridging switches and ACD's. The Intelligent **Network** is an overlay network coexisting with
:D
the MCI Switching Network and is comprised of...

...become part of one larger whole with concomitant increases in the level of analysis, testing, **scheduling**, and training ...session with the PAR using the modem to modem connection over a Public Switched Telephone **Network** (PSTN) connection.

The computer transfers Point-to-Point (PPP) packets to the PAR using the ...The packet classifier 2050 hands off priority tagged and non-tagged

packets to the packet **scheduler** 2060 via the process to process interface (90). The process to process interface 2090 need...

...process to process interface 2085, but the same selection of techniques is available. The packet **scheduler** 2060 used a priority queuing technique such as Weighted Fair Queueing to help ensure that...

...placed on an outbound network interface queue ahead of competing best-effort traffic.

The packet **scheduler** 2060 hands off packets in prioritized order to any outbound **network** interface (2010, 2070, 2071 or 2072) via the host processor to peripheral bus 2095. Any...existing communication network systems has its own way of providing service management, resource management, data **management**, security, **distributed** processing, **network** control, or operations support. The architecture of the ISP 2100 defines a single cohesive architectural...
...e Customizable: customer is able to tailor the service offerings to their own needs.

Customer **managed**: customer has direct (**network**-side) access for the administration and control of their service.

Loosely Coupled: services obtain and...

...io the ISP's role.

Revenue Management 2112 - responsible for financial aspects of customer services.

Network Management 2114 - responsible for the development and operation of the physical **networks** 2102.

9 Product **Management** 2116 - responsible for the creation and marketing of customer 1 5 services.

The ...9 Global Alliance Partners 2124 - organizations which have shared facilities and exchange capabilities of their **networks** and service infrastructures.

C ISP Functional Framework

Figure 21 shows components of the ISP 2100...

...the platform as well as service logic. Management services are deployed and managed through the **Management** Service Gateway 2130. Also, interfaces with management systems external to ISP 2100 are realized by ...

...services include collection and filtering of alarm information from the ISP 2100 before forwarding to **network management** 2132.

* Service Engines 2134 - A Service Logic Execution Environment for either marketable or management services...services to execute.

aResource Managers 2150 - manages all resources, including specialized resources 2152 and service **instances** running on service engines 2134, and any other kind of resource in the ISP 21...

...the same way. Calls (or transactions) will originate in a network from a

customer service **request**, the ISP will receive the transaction and provide service by first identifying the customer and...component of the ISP. Each of these entities is expected to be deployed in multiple **instances** at multiple sites.

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E. ISP Components

Ext App 2176- an external application;

App 2178...

...2186- the ISP monitoring functions (for fault, performance, and accounting),
GRM 2188- the global resource **management** view for selected resources;
LRM 2190- the local resource management view for selected resources;
SR...

...execute the desired service logic; and Service Select 2194- the function which selects the service **instance** (running on a service engine 2134) which should process transactions offered from the networks.

1...by each capability operation is defined by the capability operation support data parameters and user **instance** data parameters.

9. Capabilities are deployed into the network independent of any service.

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. Capabilities...

...Management Model 2150 must allow for the enforcement of resource utilization policies such as resource **time out** and preemptive reallocation by priority.

8. The Resource Management Model 2150 must be able to...to enter a pool, and deregister to leave a pool.

11. The only way to **request**, acquire and release a resource 2152 is through the RM 2150.

12. The relationship between resources should not be fixed, rather individual **instances** of a given resource should be allocated from a registered pool in response to need...

...logic and other meta-data controls provide a flexible means to apply policy.

14. Data **Replication** provides reliability through duplication of data sources.

15. Database Partitioning provides scalability by decreasing the...will be gained through Mediation Layers.

I 0 8. Operational Functions - Operational personnel handle the **Network Layer & Element Management** for physical & logical resources.

9. Administration Functions - Administration personnel handle the Planning & Service Management.

10...

...by 1 5 administration personnel under the domain of the Data Management system.

11. Telecommunication **Management Network** (TMN) compliance -
TN/IN compliance will be achieved through a gateway to any TNIN system...
in a sense of an object-oriented object as described earlier in the
specification. An **instance** of a service 2200 contains other
objects, called service features 2202. A service feature 2202...

...source of input service data;
the destination for output service data;
error values and error **handling**;
invocation of other services 2200;
9 interaction with other services; and
the interactions with other...

...Management and Marketable Services are part of the same service model.
The similarities between of **Management** and Marketable Services
allow capabilities to be shared. Also, Management and Marketable Services
represent two viewpoints of the same **network: Management**
Services represent and operational view of the network, and Marketable
Services represent an 1 5...has internal, private state data, and a
well-defined interface for creating, deleting, and using **instances**
of the capability.

Invoking a capability 2204 is done by invoking one of its interface...

...in User Profiles, which is defined by customers or their representatives
when the service is **requested** (i.e. at creation time).

5. Service 2200 Execution

1 5 Services 2200 execute in...service select function 2148 (Figure 21)
uses the Resource Manager 2150 function to find an **instance** of the
executing service 2200 to invoke. The initiating action is delivered to
the service 2200 **instance**, and the service logic (from the service
template) determines subsequent actions by invoking additional service...
many locations simultaneously, but a i o particular piece of data and all
of its **replicated** copies are viewed logically as a single item.

A key difference in this embodiment is...

...is stored at many locations simultaneously. A particular piece of data
and all of its **replicated** copies are viewed logically as a single
item. Any of these copies may be partitioned...

...The architecture is that of distributed databases and distributed data
access with the following functionality.

Replication and Synchronization;

9 Partitioning of Data Files;
Concurrency Controls;
Transactional Capability; and
Shared common Schemas...

...system components and high-level information flows. None of the
components depicted is physical. Multiple **instances** of each occur
in the architecture.

The elements in Figure 28 are.

e NETWK 2224...type of information passing between the logical components.

The flows shown above are.

Rest - data **requests** to the ISP from external systems;
9 Resp - responses from the ISP to external **requests**;
Access - data retrieval by applications within the ISP;
Updates -data updates from applications within ISP...

...behalf of the

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external systems or network element such as Order Entry or Switch
requested translations.

Data applications support the following functionality.

Updates: allow an application to insert, update, or delete data in an
ISP **database**.

Access **requests** allow an application to search for data, list
multiple items, select items from a list...

...special forms of updates which are directed to the monitoring function
(dbMon) 2240.

b) Data **Management** 2138

(1) Client **Databases** (dbClient) 2234

The dbClients represent satellite copies of data. This is the only way
for...2138 domain. Data Management policies include security,
distribution, integrity rules, performance requirements, and control of
replications and partitions.

dbAdmin 2238 includes the physical control of data resources such as
establishing data...sizing is left to a detailed engineering design task.
It is not common for a **database** copy to be distributed to the Order
Entry (OE) sites 2251, however in this architecture...

...for network or system applications such as the ISN operator consoles,
ARUs, or NCS switch **requested** translations.

83

The Central sites 2254 provide redundant data storage and data access
paths to...Management Architecture should take advantage of commercially
available products whenever possible. Vendors offer database technology,
replication services, Rules systems, Monitoring facilities, Console
environments, and many other attractive offerings.

J. ISP Resource...

...in particular.

I 0

C) Objectives

In the existing traditional ISP architecture, services control and
manage their own physical and logical resources. Migration to an
architecture that abstracts resources from services...

...This functionality is represented by the Resource Management 2150 Model.

The objectives of the Resource **Management** Model are designed to allow for **network**-wide resource **management** and to optimize resource utilization, to enable resource sharing across the network.

9 Abstract resources...Resource Management Model is a mechanism which governs and allows a set of functions to **request**, acquire and release resources to/from a resource pool through well-defined procedures and policies...

...de-allocation process involves three phases.

Resource Requisition is the phase in which a process **requests** a resource from the Resource Manager 2150.

Resource Acquisition: If the **requested** resource is available and the **requesting** process has the privilege to **request** it, the Resource Manager 2150 will grant the resource and the process can utilize it...

...to either abandon the resource allocation process and may try again later, or it may **request** that the Resource Manager 2150 grant it the resource whenever it becomes available or within...

...register and de-register as legitimate members of resource pools.

Resource Management Model policies enforce **load balancing**, failover and least cost algorithms and prevent services from monopolizing resources. The Resource Management Model...LRM domain.

Figure 31 illustrates the domains of the GRM 2188 and LRM 2190 within **network** 2270.

4. The Resource Management Model (RMM)

The Resource Management Model is based on the...allocation is achieved through six steps. Figure 32 depicts these steps.

1 . A process 2271 **requests** the resource 2173 from the resource manager 2150.

2. The resource manager 2150 allocates the resource 2173.

90

The resource manager 2150 grants the allocated resource 2173 to the **requesting** process 2271.

4. The process 2271 interacts with the resource 2273.

5. When the process...

...LRM can not allocate a resource because all local resources are busy or because the **requested** resource belongs to another locale. In such cases, the LRM can consult with the GRM to locate the **requested** resource across the network.

9 1

(4) The Resource Management Information Base (RMIB)
2274

As...

...LRM that will facilitate the resource access. When the process needs a resource it must **request** it through its assigned LRM. When the LP'M receives a **request** for a resource, two cases may occur.

1 . Resource is available: In this case, the...LRM 2190 consults with the GRM 2188 for an external resource pool that contains the **requested** resource. If no external resource is available, the LRM informs the **requesting** process that no resources are available. In this case, the **requesting** process may.

* give up and try again,
& **request** that the LRM allocate the resource whenever it becomes available, or
93
request that the LRM allocates the resource if it becomes available within a specified period of...

...LRM 2190. Then the LRM either.

9 allocates the resource on the behalf of the **requesting** process and passes a resource handle to it (In this case the resource allocation through the GRM is transparent to the process), or advises the **requesting** process to contact the LRM that manages the located resource.

d) GRNI, LRNI and RNIIB Interactions

The RMIB 2274 contains all information and status of all **managed** resources across the **network**. Each LRM 2190 will have a view of the RMIB 274 that maps to the...

...all LRMs views. The GRM's total view enables it to locate resources across the **network**.

In order for the RMIB 2274 to keep accurate resource information, each LRM 2190 must...hardware) and logical resources (software).

b) Scope

The OSM described here provides for the distributed **management** of ISP physical **network** elements and the services that run on them. The management framework described herein could also...

...their resulting impact on services.

The management services occur within four layers

e Planning,
Service **Management**,
Network Layers, and
Network Elements.

Information within the layers falls into four functional areas.

* Configuration Management,
Fault Management,
Resource...

...and services within the ISP.

This operational support architecture is consistent with the ITU Telecommunications **Management Network** (JMN) standards.

C) Definitions

Managed Object: A resource that is monitored, and controlled by one...

...A collection of one or more management systems, and zero or more managed systems and **management** sub-domains.

Network Element: The Telecommunications network consist of many types of analog and digital telecommunications equipment and...in the Planning layer 2300. Managers within the SM layer may also interact with other **managers** in the SM layer. In that case there are manager-agent relationships at the peer...

...current and future (trending) services.

Accounting 2326: Process and forward Accounting information.

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Network Layer Management.

The ISP **Network Layer Management** (NLM) Layer 2304 has the responsibility for the **management** of all the **network** elements, as presented by the Element Management, both individually and as a set. It is...on the behalf of the Element Management Layer 2306.

C) Information Model

Figure 35 shows **manager** agent interaction. Telecommunications **network management** is a distributed information application process. It involves the interchange of **management** information between a **distributed** set of management application processes for the purpose of monitoring and controlling the network resources...

...purpose of this exchange of information the management processes take on the role of either **manager** 2350 or agent 2352. The manager 2350 role is to direct management operation **requests** to the agent 2352, receive the results of an operation, receive event notification, and process...

...received information. The role of the agent 2352 is to respond to the manager's **request** by performing the appropriate operation on the managed objects 2354, and directing any responses or...BER could be used to develop this common understanding for all PDU exchanged between the **management** processes (**manager/agent**).

C) Services of the upper layer

The following identifies the minimum services required of...

...the value of an attribute.

CANCEL-GET: To cancel a previously issued GET.

ACTION: To **request** an object to perform a certain action.

CREATE: To create an object.

DELETE: To remove...

...legacy systems that are not compatible with the supported interfaces.

Equipment that provides a Simple **Network Management Protocol** (SNMP) interface will be supported with Mediation Devices.
1 5 6,7,8,9...

...two levels from which the ISP 2100 will be managed.

1. For trouble-shooting, the **Network Layers Manager** 2372 gives field support a picture of the ISP as a whole. The process of...

...could be isolated to a single Network Element. Individual Network Elements are accessible from the **Network Element Managers** 2374 and would allow a more detailed level ...ISP is missing from today's ISP, but many recognize its importance.

For configuration the **Network Layers Manager** 2370 provides an ISP-wide view, and interacts with the **Network Element Managers** 2374 to configure **Network Elements** in a consistent manner. This will help insure that the ISP configuration is consistent...

...Creation Environment 2376, the Service Manager 2378 is used to place it in the ISP **network**, and provision the **network** for 1 5 the new service. Customers for a service are provisioned through the Service...

...services increases the Service Manager 2378 predicts the need to add resources to the ISP **network**.

This Service **Management**, with appropriate restrictions, can be extended to customers as another service. While Service Creation is...by network elements. ISUP RLTAMT, TCPAP domain name lookups and ISDN Q.931 are all **instances** of this. The IN requires, uses and generates this information. Signaling information coordinates the various...

...set of physical entities collocated in a geographically local area. In the current ISP architecture, **instances** of sites are Operator Center, ISNAP Site (which also has ARU's) and an EVS...shared feature/functionality of services to create a common look and feel of features.

A. **Network Management**

The architecture is designed such that it can be remotely monitored by an MCI operations...Welcome server 450 is stateless.

The statelessness means that there is no need to synchronize **multiple Welcome Servers** 450.